INDIAN TARIFF BOARD

EVIDENCE

Recorded during enquiry into the

STEEL INDUSTRY

Volume I

The Tata Iron and Steel Company

CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
1924

TABLE OF CONTENTS.

PART A.

Written.

PAGE.

I. Original representation submitted by the Tata Iron and Steel Company, Limited, dated 27th-28th July 1923 with its enclosures 1

- (1) Evidence of the Tata Iron and Steel Company, Limited, before the Fiscal Commission 4
- (2) Letter to the Government of India, dated the 23rd October 1922 13
- (3) Savings on cost of rails to State and Company Railways . 22
- (4) Particulars of capital 26
- (5) Distribution of profits 29
- (6) Import duties levied by different countries and State aid or bounties granted by Government for the protection of iron and steel industries 30
- (7) Imports of steel into India with the country of origin . 47
- (8) Price of steel in the country of origin compared with price quoted for export 48
- (9) Tata Iron and Steel Company's costs 50
- (10) Extracts from confidential and published reports showing the dumping of steel in India 52

II. Second representation submitted by the Tata Iron and Steel Company, Limited, regarding "The Protection of Young Industries," dated August 1923 56

III. Subsequent letters from the Tata Iron and Steel Company, Limited:—

- (1) Letter from Messrs. Tata Sons, Limited, No. G.-808—23, dated 24th-26th July 1923 with the following enclosures :— 66
  - (a) A list of the various kinds of steel and steel products which the Company manufactures at present or expects to manufacture before the end of 1925 67
  - (b) A statement showing year by year the outturn of pig iron and the various kinds of steel and steel products by the Iron and Steel Company since production began up to 31st March 1923 . 69
  - (c) A list of subsidiary industries already established at Jamshedpur or to be established before the end of 1925 70
  - ***(d)*** A statement showing amounts received on account of share capital from time to time as at 31st March 1923 71

PAGE.

(e) A statement showing amounts received on account of Debenture loan and loans secured by Debentures from time to time as at 31st March 1923 72

(f) A statement showing Interest paid on Debentures and loans secured by Debentures from time to time as at 31st March 1923 73

(g) A list of the firms in India using steel for manufacture purposes to whom the Company sold steel in 1922-23 74

(2) Letter from Messrs. Tata Sons, Limited, No. G.-1273—23, dated 5th November, 1923 with the following enclosures: — 75

(a) A statement showing expenses on production of pig, steel products, bye-products materials, etc., for the year 1919-20 . 76

(b) Sale-proceeds of pig iron and bye-products for 1921-22 and average price per ton . . 77

(3) Letter from Messrs. Tata Sons, Limited, No. G.-1275, dated 5th November 1923 with the following enclosures :— 77

(a) Statement showing block, working capital, funds for the years 1915-16 and after Greater Extensions 1925-26 78

(b) Note regarding Greater Extensions . . . 79

(c) Notes by Mr. Tutwiler of meeting held in General Bingley's office 84

(d) Copy of letter No. G.-1905, dated 18th/19th September 1918, from Tata Sons, Limited, to the Secretary to the Government of India, Finance Department 85

(e) License under the Indian Company's Restriction Act, 1918 (XII of 1918) 88

(f) Copy of a letter from Mr. H. Treble to Sir William Bull, dated 4th June 1917 . . 89

(g) Copy of telegrams from His Excellency the Viceroy (Indian Munitions Board), to His Majesty's Secretary of State for India, dated the 21st August 1918 90

(h) Copy of letter No. G-2102, dated 14th September 1917, from Tata Sons and Company, to Sir Thomas Holland, K.C.I.E., F.R.S., President, Munitions Board 91

(i) Copy of cables from Messrs. Tata, Limited, London, dated 5th and 10th September 1917 . 93

(j) Copy of letter from the Secretary, Indian Munitions Board, to Messrs. Tata Sons and Company, No. G.-3, dated the 11th January 1918 . 94

(k) Copy of letter from the Secretary, Indian Munitions Board, No. G.-3, dated 13th February 1918 95

(l) Copy of letter from Mr. S. M. Marshall to Mr. C. P. Perin, No. 9929, dated 18th May 1918 95

(m) Copy of letter from Sir Thomas H. Holland to Sir T. W. Holderness, Under-Secretary of State for India, dated 21st August 1918 . 96

PAGE.

(4) Letter from Messrs. Tata Sons, Limited, No. G.-1280, dated 5th November 1923, with the following enclosure:— 98

Statement showing comparison of costs for 1915-16, 1921-22, and after Greater Extensions (three methods) 101

IV. Statement—

List of Statements 104

Statements Nos. 1 to 107 109

PART B.

Oral.

1. Oral evidence, dated 17th August 1923 259
2. Oral evidence, dated 18th August 1923 275
3. Oral evidence, dated 20th August 1923 292
4. Oral evidence, dated 23rd August 1923 306
5. Oral evidence, dated 24th August 1923 322
6. Oral evidence, dated 25th August 1923 334
7. Oral evidence, dated 27th August 1923 348
8. Oral evidence, dated 14th December 1923 363
9. Oral evidence, dated 15th December 1923 385
10. Oral evidence, dated 17th December 1923 407
11. Oral evidence, dated 19th December 1923 441
12. Oral evidence, dated 20th December 1923 460
13. Oral evidence, dated 21st December 1923 475

Part A—Written.

सत्यमेव जयते

1.

Letter from Messrs. Tata Sons, Ltd., Agents, The Tata Iron & Steel Co., Ld., to The Tariff Board, No. G. 819/23, dated the 27/28th July 1923.

From the Communique published by the Government of India we understand that the first subject for enquiry by the Tariff Board will be the question of extending protection to the manufacture of steel in India and that firms interested in the steel industry who desire that their views should be considered by the Tariff Board should address their representations to the Secretary of the Board. We have, therefore, the honour to forward for the consideration of the Tariff Board the following papers which contain our representation on the subject:—

(*a*) A copy of the evidence given by the Steel Company before the Indian Fiscal Commission. [*]

(*b*) A copy of the Steel Company's confidential letter No. G. 1460/22, dated 23rd October 1922, to the Secretary of the Commerce Department of the Government of India.

(*c*) Statement of action taken by other countries to protect and foster the steel industry.

(*d*) Charts prepared by our Consulting Engineers in America Messrs. Perin and Marshall, showing the effect of the tariff in the United States and Canada on the production of iron and steel in the country. The charts with regard to Canada are particularly interesting as showing the great increase in production resulting from a tariff deliberately imposed in order to foster the industry combined with a system of bounties such as we have suggested in our evidence before the Fiscal Commission.

2. In our letter, dated the 23rd October 1922, we have stated the case for protection very fully, and we are prepared to prove any of the statements made therein to the satisfaction of the Board. We desire, however, to bring this letter upto date. The general arguments as stated therein apply with even greater force to-day, as the exchanges in the principal foreign producing countries are still further depreciated and as the dumping of which we have complained has continued during the interval with even greater vigour. We attach statements showing the import into India of all steel materials with the country of origin. We also attach a statement giving the average monthly price of such supplies in the country of origin, so far as we have been able to ascertain this, as compared with the prices quoted for export. We also attach a statement showing our average costs and exact details of these for the same year. These figures may be substituted for the figures given in paragraph 5 of the letter to which we have referred. No alteration is required in the figures given in paragraph 6 of that letter. With regard to the figures given in paragraph 8, we submit the following figures for the consideration of the Tariff Board:—

Our net profits for the year 1920-21 were Rs. 116·95 lakhs.

Our net profits for the year 1921-22 were Rs. 88·37 lakhs.

Our net profits for the year 1922-23 were Rs. 1·22 lakhs.

(Depreciation and Taxes have not been deducted from these figures.)

The Balance Sheet has not yet been passed for last year but so far as we can see this will reduce the figure of 8·78 per cent. given as the percentage of dividend on capital amount of the Company to 6·79 per cent. and it must be remembered that this includes the War years when very considerable profits were made.

---

[*] Not printed.

The Board will undoubtedly appreciate the significant difference in the figures. We can assure them that it is not due to any falling off either in production or in the quality of the products, nor is it due to labour troubles which were just as pronounced during the first two years as in the last. The sole cause of this great decrease in the profits of the Steel Company has been the extraordinarily low prices of steel prevailing in this country during the past 12 months, and those low prices have been due entirely to the dumping of steel in this open market by every country in the world which has been permitted since the war while at the same time, every country, including the self-governing dominions, has taken steps to prevent such dumping. The natural result has been that this country has been flooded with cheap material from Belgium, Germany and England owing to the desire of manufacturers in those countries to keep their plants working at any cost. As we have stated in our letter, it is always extremely difficult to prove dumping, but we attach to this letter copies of extracts from confidential reports the originals of which we are prepared to shew to the Tariff Board and the difference between the prices quoted for home consumption and for export proves conclusively that manufacturers in England and other countries have been selling in India at a price much below the market price in their own countries and even below cost. Competition in the steel trade is extreme and the profits from the industry are on the whole very small. The prices for home consumption are, therefore, very little over cost price and the prices quoted for export, being lower, must leave practically no profit and are often under the cost of manufacture.

We may also point out that the figure of 42·6 per cent. per annum of the net profits taken for depreciation which amounts to 3·12 crores includes a sum of 1·20 crores which was specifically set aside for the extensions of the Plant.

3. With regard to the figures given in paragraph 9 of our letter, we would point out that the gain to the country resulting from our contracts with the Railways is to-day much higher than it was last year, as the price of imported rails landed in India and allowing for the present Customs duty would to-day be Rs. 187·9 and Rs. 253·4 for rails and fishplates respectively as compared with the price of Rs. 122·5 and Rs. 152·5 a ton at which we are supplying the Company Railways. As these Company Railways will take from us during the year 24,382 tons of rails and 929 tons of fishplates, the actual saving in money to the country would be Rs. 16·88 lakhs; also we have to supply 14,992 tons of rails only to the Bengal Nagpur Railway at Rs. 110 per ton and the gain to the country would be Rs. 11·68 lakhs, that is, a total gain to the country on account of the rails and fishplates supplied to the Company Railways would be Rs. 28·56 lakhs; and it may be pointed out that it would be impossible for these Railways to purchase their rails except from England or at a lower price. The same argument would also apply in the case of rails supplied to Government, but, as the price for this year has not yet been settled by Government, we cannot give the exact figure. At last year's price the gain to the country will be Rs. 13·50 lakhs.

4. We may also particularly draw the attention of the Tariff Board to the statements which we have prepared shewing the steps taken in other countries to foster and develop this essential industry. The evidence on the point may be summarized as follows:—

In Canada the Government has steadily by a system of high tariffs and bounties fostered the development of the industry. In the year 1900 the total production of pig iron was 86,000 tons. In the year 1920 this had increased to nearly a million tons. In the case of steel the production of steel ingots in 1894 was 25,000 tons. It is now over a million tons.

In Australia the tariff has been raised to a very high point and Indian rails imported into that country would have to pay a duty of 75 to 85*s.* a ton. Bounties have also been given by Government, one of the conditions of these being that they should not be granted if the profits exceed *15 per cent.*

per annum on the capital invested. Further, it will be noticed that the Australian Government have on one occasion deliberately paid a higher price for rails made in the country than that quoted by English manufacturers in order to protect the industry. We have consistently in the past four years supplied the Indian Government and the Indian Railways at prices much below the price of imported rails.

In New Zealand £150,000 has been set apart for the payment of bounties on iron and steel produced in the country.

In South Africa bounties of 15s. per ton of iron and per ton of steel have been fixed by the Government.

In British Columbia a bounty of $3 per ton is given on pig iron.

In France a very high rate of duty has been imposed since the war on all imports. In addition, it will be noticed that the Railway rates on goods for export have been specially reduced in order to assist the local industries.

In Belgium an indirect bounty has been given to the manufacturers of iron and steel by a special reduction of railway rates which is equivalent to a subsidy of 30 francs per ton of pig, and steps have been taken to protect the industry by a high tariff.

In Spain a high tariff has been imposed specially in order to protect local industries which are suffering, as we are suffering, from an aggressive influx of foreign products.

In Italy a similar high tariff has been imposed in order to protect the industry as it is not in a position to fight foreign competition. In addition, Customs duties have been remitted on machinery imported for the industry and we would specially compare this with the treatment of the industry in this country where the import duties have in many cases actually been increased on materials required for the industry, as, for instance, sulphur. In Italy also exemption has been granted from income-tax and super-taxes.

In Japan similar steps have been taken. The tariff has been increased against foreign imports and bounties have been granted. Proposals have also been made to exempt the Steel Industry from taxes, but we have not been able to ascertain whether effect has been given to these.

These measures have all been taken since the war. In India alone nothing has been done and on the contrary we have been expected to supply our materials in many cases at prices far below the market price to the Indian Government and the Indian Railways. The point we wish to make here is this: it is true that many of these countries cannot compete in the Indian trade, but the fact that they have shut their doors to the countries which can compete inevitably forces the great bulk of competition upon this country where no adequate protection has as yet been afforded to the industry.

5. As we have already stated in our letter to the Government of India the Steel Industry is for other special reasons a fit case for protection; it is still an infant industry: we have not yet learnt the art of manufacture as Great Britain, the United States and other countries have; we are still obliged to import skilled labour. For all these reasons we cannot compete with foreign goods. But the Steel Industry is not one which will for ever require protection; we have abundant raw material; we have demand for our goods; we are taking every possible measure and at great cost to teach the art of manufacture to Indians thereby dispensing with foreign labour and lessening costs.

While we are doing this we require protection. The case of the United States is exactly parallel. Great Britain and other countries knew the art of manufacture long before the United States did and could import into the United States steel cheaper than the United States itself could produce. The United States Government considered this a fit case for protection. We

would specially draw attention to chart No. 4 for steel rails in the United States. In 1870 the production was small and the imports were large; a heavy tariff rate was imposed. The result was that production went on increasing and the imports began to be reduced and ceased and even exports began. As soon as this state of affairs came into existence, the United States gradually reduced the tariff rate and from 1912 to 1922 steel rails could be imported free into the United States. But the United States by this time had nothing to fear from any country. They could produce steel as cheaply as any other country and were able even to export to other countries as cheaply as other countries could produce.

6. The Steel Company employs about 40,000 men. If the part of the works engaged in the manufacture of Steel is closed, as seems extremely likely if the present unfair competition is allowed to continue while Indian labour has not yet fully acquired the necessary skill, most of these men would be thrown out of employment. In addition, it is probable that the workmen of the subsidiary Companies established at Jamshedpur who are dependent on the Steel Company for supplies of steel at specially favourable rates will also be thrown out of work. Those affected would be:—

Name of the Company.	Authorised Capital.	Issued Capital.
	Rs.	Rs.
1. Enamelled Ironware, Ltd.	15,00,000	10,00,000
2. The Tinplate Company of India, Ltd. . .	75,00,000	75,00,000
3. The Agricultural Implements Co., Ltd. . .	25,00,000	25,00,000
4. The Indian Steel Wire Products, Ltd. . .	50,00,000	25,00,000
5. The Calmoni Engineering Co., Ltd. . .	37,50,000	28,00,000
6. The Peninsular Locomotive Co., Ltd. . .	60,00,000	16,50,500

It may be pointed out that in that case not only will the capital invested in the industry and in subsidiary industries become absolutely unproductive, but the acquired skill which has been obtained by the laborious and careful training of the Indian artisan at Jamshedpur during the past 12 years, would also be lost to the country. So long as the steel market in this country is open freely to any producing country for the dumping of its wares below cost price while at the same time all the materials and machinery which the Steel Company has to import are heavily taxed as at present, the industry cannot survive at all.

7. For the convenience of the Board we are having copies of the papers printed and will forward fair copies as soon as they are ready.

Enclosure (*a*):—

Evidence given before the Indian Fiscal Commission in March 1922 by Mr. J. C. K. Peterson, c.i.e., representing The Tata Iron and Steel Co., Ltd.

GENERAL.

The manufacture of iron and steel in this country is an industry which must be treated as a special case. It does not come within the general principles outlined in the questions put by the Commission. We have answered these questions, but we also desire to state the case for the protection of this industry in more general terms.

Iron and steel is the basis of our existing civilization. If a continuous supply of this material is not available, that civilization must inevitably perish. It is the raw material of all industries as without it practically no manufacturing plant could be erected and no efficient means of transport could be devised. These are the two things on which our present civilization rests: increased productive power and increased means of transport. Iron and steel are essential for both. They are also a nation's first line of defence. They enter into the manufacture of all munitions of war. There is no nation that could defend itself for 24 hours, if deprived of all supplies of iron and steel; and even without war, if supplies of the material were entirely cut off from it, any nation would be ruined. It is for these reasons that England, America, Germany and France are all great producers of iron and steel within their respective territories; and Japan, although not possessing the same natural advantages, has been forced to obtain concessions of Chinese ore and to develop the manufacture of steel to a very high point

The last war shewed very plainly that in the future no country can depend on the maintenance of overseas communications in the case of war, or on its accustomed supplies of any material that is required for military operations. When the great war broke out the first commodity to vanish was gold. The second was certainly steel. Every Government imposed restrictions on its sale; every Government prohibited its export. Prices rose to a preposterous level until they were ten and even fifteen times what had been paid before the war. Even the Indian Government itself had to pay these prices for imported steel bought in the open market, and could not obtain sufficient supplies.

These conditions will arise again immediately on the outbreak of war between any two powers, even if the Empire of which this country is a unit is not involved in the struggle. If there is war in Europe, we shall get little or no steel except what we make ourselves. We shall have to pay enormous prices for what we do get, and, as a result, our industries and Railways will be starved for want of their most essential raw material. If India itself is engaged in the war, it will find it impossible to defend itself, unless the manufacture of iron and steel has been firmly established in the country.

The statement (A) attached shews clearly the effect of the war on the quantity and value of our imports of iron and steel. In 1919-20 our imports were nearly ½ those of 1912-13 and we paid over twice as much for these. The results can be seen by any one in the condition of our Indian Railways and industries to-day.

If we are to safeguard ourselves we must develop the industry in this country without delay. Even if we had no natural resources, we should still have to develop it as Japan has had to do. But we have natural resources that are practically inexhaustible. The deposits of iron ore in India are among the largest in the world, and are of the finest quality—of a much finer quality than those of Europe or America. Good coal and flux lie near them. There is no reason why India should not become one of the largest producing countries in the world, and why it should not rank with America, Germany or England; nor is there any reason why it should not ultimately produce iron and steel as cheaply as it can be produced in any part of the world. India's present consumption of steel is about 700,000 tons annually, and before the war exceeded one million tons annually. Of this quantity our Works made about 130,000 tons. We could do with much more steel in the country. But, in any case, India is not safe, its defence is not secure, its civilization is not sure until it can produce at least the total quantity of steel which it at present consumes for the bare maintenance of its transport and manufactures. To ensure this the industry must in some way be protected or subsidised in order to guard it against foreign competition until it is firmly established. It is at present in its infancy compared with the gigantic factories of America, England, Germany and France. The comparison below of the production of these countries for the year 1919 shews this clearly:—

Countries.	Production of Steel.	
United Kingdom	5,088,991 tons	Figures taken from the "Iron Monger" Metal Market Year Book 1921.
United States	25,101,544 tons	
France	1,387,177 tons	
Belgium	411,055 tons	
Germany (January to October)	4,815,009 tons	
India	134,060 tons	

It is obvious that, if any of these countries seeks to destroy this infant industry in order to secure a new market, it could do so without effort, and the trouble of the world's present system of production and sale is that all the efforts of great producing factories such as those of England, America, Germany and Belgium must tend in that direction. Sentiment or politics have no place and very little effect in business. These countries have also special advantages. By a high tariff against foreign goods America and Germany are enabled to sell at low prices in outside markets, and have always made this a feature of their business methods. The Belgium producer at present enjoys a bounty on all exported steel, and these countries and England also have the very great advantage of a completer and better organized system of transport than India. The comparison of the freight rates (statement B) attached to this note shews that it costs us more to deliver steel or iron at Bombay, Madras, Karachi, Ceylon or Rangoon than it costs to send steel from the English ports and Antwerp or Bremen to these ports.

Apart from these considerations, these countries have also the enormous advantage of a reserve of skilled labour on which they can draw. In India there is no such reserve, though one will be built up in time as the industry becomes gradually established. If a skilled man leaves us or is incapacitated, it takes us 6 months and a large sum of money to replace him. It is impossible to say that the industry in India is established until we have natives of the country who are competent to fill the highest positions in the works, as in the case of Japan. We are at present still in the pioneer stage. Through this pioneer stage this industry must be protected, if India is ever to have a separate national existence and become an integral and vital part of the Empire both in defence and progress. Other Steel Companies in India are already projected and the internal competition which may be expected from them is a sufficient safeguard against any monopoly.

But to admit that the industry requires protection does not solve the problem. We have considered the whole question very carefully, and have come to the conclusion that a policy which would give the iron and steel industry protection to the extent of 33⅓ per cent. over imported material for a period of five years which might be gradually reduced within a period of 15 years to 15 per cent. should make it possible for the industry to stand by itself and should eventually cheapen the cost of this essential material to the whole of India. We realize, however, that until Indian Works are in a position to supply the total requirements of India there will always be some difficulty in imposing so high a tariff, although it is not higher than that which has been imposed by foreign Governments and by the Government of Australia for the protection of the industry. It is for that reason that in our original application to Government we suggested that the assistance required by the industry could best be given in the form of a bonus on production, and we would still prefer that a moderate duty of, say, 15 per cent. should be levied on foreign steel and the balance of the protection required should be afforded by means of a direct bonus on production, the financial assistance required being obtained from the proceeds of the duty suggested. The attached statement (C) shews the effect of such a proposal for the year 1919-20. We also wish to point out that any protection afforded to the industry would be valueless unless the duty imposed is also levied on all stores of Railway materials imported by Government for its own use. It is also essential that the protection afforded should be increased proportionately with any rise in exchange as such rise would make the protection valueless.

Q. 43. Are you interested in any industry and if so, in what capacity?

A. Yes. The Iron and Steel trade. I am a Director of the firm of Tata Sons, Ltd., who are the Managing Agents of the Tata Iron and Steel Co., Ltd. I have also been authorised by the Steel Company to give evidence as their representative.

Q. 44. Do you consider that there are natural advantages for the industry in India? If so, please enumerate them.

A. The iron ore resources of India are enormous and are readily accessible. The percentage of iron in the ore is exceptionally high, much higher than is usual in Europe or America.

Dolomite, limestone and coking coal in large quantities exist close to the deposits of ore. The coal is not of the highest class but its close proximity to the deposits of ore more than offsets this disadvantage.

Q. 45. Do you consider that the industry is essential to the national security or of substantial importance to the economical prosperity of India?

A. Yes. The first part of the question cannot be better answered than by a quotation from the speech delivered by Lord Chelmsford, late Viceroy of India, when he visited Jamshedpur in January 1919. He said: "I can hardly imagine what we should have done during these years if the Tata Company had not been able to give us steel rails which have been provided for us, not only for Mesopotamia but for Egypt, Palestine and East Africa."

From the beginning of the war to the end, the Company supplied to the Government about 291,562 tons of steel material in the shape of rails, shell steel and structural material at an average base price of less than Rs. 150 per ton. If this pioneer Steel Works had not existed, this supply would have had to be obtained from the United States, as the English Works were busy with urgent Munition work of their own. The average price at which the Government could have secured their requirements from the States would have been at least Rs. 200 per ton more than what they have paid to this Company, considering the high level of prices obtaining in the States and the exorbitant freight and insurance rates. In other words, the establishment of these Works before the war enabled Government to save about six crores of rupees and, what was far more important, to base the successful campaigns in Mesopotamia, Palestine and East Africa in this country and avoid the dangers of the maritime transport of this essential material through the Mediterranean which was infested by enemy submarines. This strategic advantage far outweighed any saving in money.

Q. 46. What is the state of organisation and equipment of the industry in India as compared with that in other countries?

A. This industry in India is still in its infancy. It was with very great difficulty and after repeated failures in securing the necessary capital, that in August 1907 the Tata Iron and Steel Company was successfully registered. The construction period itself took between 4 and 5 years, and when the operation began, the utmost difficulty was experienced in manufacturing iron and steel of good quality. Even when the necessary standard was attained, the cost of production was so high that it was impossible to compete with foreign imports. At this time, however, the war intervened and acted as an accidental protection to the Steel Company, all imports having ceased and our Works being mostly employed in supplying steel to Government and, to a limited extent, to the open market. With the cessation of war and the declaration of peace, the position has reverted to what it was before, namely competition with foreign imports at unusually low prices.

As regards organisation and equipment, though 11 years have passed since operation was started, this industry cannot be said to be on a stable footing, for the important reason that with the exception of the Coke Ovens and Electrical Department, the operation of the Works is still dependent on the skill of the foreigners brought out chiefly from England and America. This great handicap counterbalances to a considerable extent, any advantage we may possess in the relative cheapness of some of our raw materials and unskilled labour. To what extent this handicap of foreign skilled labour affects our operation will be seen from the following quotation from the evidence given by Mr. T. W. Tutwiler, the General Manager of our Works, before the Industrial Commission. He said: "When an Indian is substituted for a foreigner, there is a great saving in salary, as the convenanted hands have to be paid much more than the Indians. Over and above salaries convenanted men are given free passages to and from their homes and salaries when travelling; they are also paid very handsome bonuses when they exceed certain tonnages.

"I am sure where Indians have been substituted for Europeans in these Works, the quality of our products has not suffered."

For various reasons, this process of substituting Indians in place of foreigners at our Works has been extremely slow, because up to now we were occupied with other more important problems. Before the war, all our efforts were chiefly concentrated towards improving the quality of steel we were making, and during the war, the question of supplying the urgent requirements of the Indian Government naturally claimed all our attention, the plant being worked at its utmost capacity. With a view to overcoming this difficulty of imported labour, our Company has now established, at a very heavy cost, the Jamshedpur Technical Institute, where Indian students with University qualifications, will be taught metallurgical chemistry and metallurgy. It is expected that students undergoing this course, which lasts for 3 years, will be competent to take up responsible positions at the Blast Furnaces, the Steel Furnaces and other operating departments of our Works, so that in course of time, all the manufacturing departments or most of them will be manned by Indian skilled workmen.

Q. 47. On what markets does the industry depend for the sale of its output?

A. Up to the present, most of our own output has been sold in India but we have also exported large quantities of pig iron, both foundry and basic, to Japan. We have also occasionally exported pig iron and steel in small quantities to the West Coast of America, New Zealand, Australia and the East generally. In the near future however the industry in India must look to the markets of the world to absorb its products and there is no reason why a large part of the output of iron, semi-finished steel and steel should not ultimately go to the West Coast of America, Africa, Italy and Europe.

Q. 48. What foreign competition (including for the purpose competition from the United Kingdom or other parts of the Empire) does the industry have to meet

(*a*) in the Indian market,

(*b*) elsewhere?

A. Very intense competition.

India with its low tariff and increasing demand is the dumping ground of the world and distance by sea is no particular protection in this trade.

Our internal Railway tariff in India is in many cases so high that internal business is also difficult against foreign competition with low sea freights. This is shown by the statement attached.

Q. 48. Part (2). Does this competition extend to all or only to particular classes of goods, and does it vary with different classes of goods?

A. Part (2). All goods which are manufactured in India. Naturally the prices of goods not manufactured here are not cut so fine, and we believe that in many cases higher prices are maintained by agreement between the various manufacturers' organisations. This was certainly the case before the war.

Q. 49. Apart from questions of organisation and equipment are there any special circumstances, natural or artificial, which give the competing country an advantage?

A. In Belgium there is an export bounty of 30 frs. per ton on steel. This and the exchanges are our chief difficulties at present.

In addition foreign countries enjoy a great advantage as a result of the present dislocation of the Indian traffic system which is proving a very serious handicap to the extensions now being made at our own Works and to the development of new works by others.

Q. 50. Do you think that the industry needs protection? If so, what rate of duty do you consider it is necessary to impose? Please give in detail the facts and figures on which you base your conclusions.

A. Our General answer covers this question. This industry stands apart from all others. In our opinion just so much protection should be assured to it as will enable it to face foreign competition and ultimately to produce the total quantity of this material required by India. In our opinion the least measure of protection required for the next 5 years is $33\frac{1}{3}$ per cent.

Q. 51. Do you think it likely that if protection is granted, the industry will eventually reach a level of development which would enable it to face foreign competition without the aid of protection, or do you think the industry will always remain to a greater or less degree in need of protection?

A. Most certainly. Not only so but we have no doubt whatever that the keen internal competition that must result from the existence of the magnificent reserves of iron ore in India will very shortly, once the industry is established on a firm basis, cheapen the cost of steel to Indian consumers below any possible price from foreign countries. When that happens and we estimate that it should happen within 20 years, the protection afforded to the industry may be removed entirely.

Q. 52. Does the industry ever suffer from dumping? If so, do you wish to suggest any remedy?

A. If by dumping is meant selling below actual cost price, it is suffering from dumping now. We believe that both English and Continental steel is being sold in this country below cost price. It is certainly being sold below our cost price. We have already suggested the remedy.

Q. 53. Is competition from other countries accentuated by depressed exchanges in those countries?

A. Yes. But we also think that the real causes of the present extreme competition are the very great increase in the world's productive capacity resulting from the war and the falling off of the demand owing to the disturbed condition of Russia and Central Europe and depressed trade conditions throughout the world generally.

Q. 54. If so, is the phenomenon likely to be temporary?

A. We have answered this in the last question.

Q. 55. Do you consider that any remedy is required? If so, what would you suggest?

A. Ditto.

Q. 56. Has the industry received any benefit from the successive enhancements of the tariff beginning in 1918? Can you describe the effects so far as yet apparent?

A. No.

Q. 57. Do you think the industry has suffered in any way from export duties? If so, please give in detail the facts and figures from which this conclusion is drawn.

A. This does not concern us.

Q. 58. Is the finished product of the industry used as the raw material for any other industry? If so, to what extent?

सत्यमेव जयते

A. The finished product is the raw material of all industries and is essential to them.

Q. 59. Does the industry use as its raw material the finished product of any other industry which is established or is likely to be established in India?

A. Yes. In our furnaces we use refractory bricks produced by the plants of Messrs. Burn & Co., Andrew Yule & Co., and the Kumardhubi Fireclay and Silica Works. The manufactures of firebricks, silica and magnesite bricks were very greatly developed during the war and this industry to a large extent depends on the maintenance of steel and iron works in India.

Q. 60. Would you prefer a system under which all industries would receive a more or less uniform protection, or one under which industries receive varying amounts of protection in accordance with their needs?

A. We ask for the protection of this one vital key industry on which all others depend. We do not wish to express any opinion as to either the merits or otherwise of protection as opposed to free trade as a general system. But generally speaking, we are opposed to protection except for the definite purpose of encouraging new industries which the country needs, and we would only then favour it as a temporary measure.

Q. 78. Do you approve of the system of *ad valorem* customs duties or would you prefer that the duty should be specific, *i.e.*, a fixed charge for a given weight or measure? If you prefer the latter system, what are your views on the necessity of readjusting the duties from time to time?

A. We prefer *ad valorem* duties.

In respect to these the provisions of the existing Act are simple. Tariff valuations lose their meaning frequently and 10 per cent. duty can easily become a 20 per cent. duty if the tariff is wrong.

सत्यमेव जयते

STATEMENT "A."

Imports for 1912-13 Compared with 1919-20.

The figures are given in thousands of tons and thousands of pounds sterling.

Iron.—(Pig, angles, bolts, bars, rice bowls).

	Total Imports.	Total Value.	Value of Govt. Imports.
1912-13	37	361	26
1919-20	18	573	74

Iron or steel.—(Beams, nuts, hoops, nails, rivets, C. I. Pipes, screws, sheets, tubes, wire, etc.).

	Total Imports.	Total Value.	Value of Govt. Imports.
1912-13	547	6,370	150
1919-20	331	13,408	487

Steel.—(Angles, springs, bars, ingots, channels, etc.).

	Total Imports.	Total Value.	Value of Govt. Imports.
1912-13	158	1,172	58
1919-20	95	3,073	158

Railway Material.

	Total Imports.	Total Value.	Value of Govt. Imports.
1912-13	244	1,764	201
1919-20	65	1,358	400

	Total Tons.	Total Value.	Total Value of Govt. Imports.	
1912-13 .	986,000	£ 9,667,000 Rs. 14,50,05,000	£ 435,000 Rs. 65,25,000	1/22nd of total.
1919-20 .	509,000	£ 18,412,000 Rs. 27,61,80,000	£ 1,128,000 Rs 1,69,20,000	1/16th of total.

सत्यमेव जयते

STATEMENT "B."

FREIGHT ON PIG IRON AND STEEL MATERIALS.

Steamer and Inland freight.

English Ports to Bombay Rs. 16-14 per ton for pig and steel—against—TATANAGAR to Bombay Rs. 15-14 per ton for pig and steel plus surcharge.

" Madras " " " " —against— " Madras Rs. 15-14 " " " " " "

" Karachi " " " " —against— " Karachi Rs. 45-0 " " " " " "

" Ceylon " " " " —against— " Ceylon Rs. 18-0 per ton for pig (Ry. freight Rs. 3-0 plus steamer freight Rs. 15-0).

" Rangoon " " " " —against— " Rangoon Rs. 23 to 28 per ton for pig and steel. (Ry. freight Rs. 3-0 plus steamer freight Rs. 20 to 25.)

ANTWERP to Bombay, Madras, Karachi, Ceylon and Rangoon Rs. 13-4 pig and steel.

BREMEN " " " " " " " Rs. 9-0 " "

JAPAN " Rangoo nRs. 12-0 for steel —against—TATANAGAR to Rangoon Rs. 23 to 28 per ton for steel.

N. B.—The freight for Bombay will be Rs. 17-8 per ton from 1st April 1922.

Aall other Railways are going to increase their rates from 1st April 1922.

STATEMENT "C."

Statement showing net revenue to Government by imposing a duty of 15 per cent. and giving a direct bounty on production.

1919-1920.

Base rate of imported steel . . . . . =Rs. 150.
Suggested duty 15 per cent. as compared with 2½ per cent.

Protection afforded to the industry by duty is therefore 12½ per cent. and additional protection required 18·33 per cent. or a bounty of Rs. 27·50 a ton.

Total Production of Steel in India:—

1919-20 . . . . 122,227 tons.

Total Import of Iron and Steel in India:—

1919-20 . . . . Tons 509,000 value £18,412,000
1919-20 12½ per cent. duty £2,301,500

Bounty on Production at Rs. 27·50:—

1919-20 . . . . . . Tons 122,227=Rs. 33,61,232
=£224,082

Balance of revenue accruing to Government would have been . . . . £2,301,500 minus
£224,082

or £2,077,418
or Rs. 3,11,61,270

Enclosure (*b*):—

Letter from MESSRS. TATA SONS, LTD., AGENTS, THE TATA IRON AND STEEL CO., LTD., to THE GOVERNMENT OF INDIA, No. G. 1460, dated the 23rd October 1922.

In our letter No. G. 1149/21, dated the 19th July 1921, we warned the Government of India of the present dangerous position of the steel industry in India caused by the re-opening of intensive competition with the Continent of Europe and the United Kingdom. In that letter we stated that steel was being brought into India at prices considerably lower than the prices at which it was sold in the country of origin, and that these prices were already in some cases below our actual cost of production. We, therefore, asked that some temporary form of protection should be afforded to the industry which was in danger of being destroyed by unfair competition. The Government of India in reply stated that they were not prepared to do anything before the report of the Fiscal Commission on the whole question of protection was received by them.

2. That report has now been received by the Government of India, and has been published. It contains the following unanimous recommendations:—

(1) That any industry which is essential for purposes of national defence and for which the conditions in India are not unfavourable should, if necessary, be adequately protected irrespective of the general conditions laid down for the protection of industries.

(2) That the steel industry is essential for purposes of national defence and that there appear to be no natural obstacles to its development in India. (Page 59, paras. 106, 107.)

(3) That foreign competition in steel is very severe and that, therefore, the question of extending protection to the manufacture of steel should be one of the first questions to be examined by the Tariff Board. (Page 60, para. 107.)

(4) That where an important industry needs immediate assistance Government should consider the claims of the industry and, if satisfied, should recommend to the Legislature the grant of the necessary help pending fuller investigation by the Tariff Board. (Page 70, para. 121.)

(5) That power should be taken to impose a dumping duty when, after enquiry by the Tariff Board, it has been established that dumping is taking place and that it is injuring or is likely to injure an Indian industry. (Page 79, para. 139.)

(6) That similar power should be taken to prevent unfair competition from a country with a depreciated exchange. (Page 81, para. 140.)

(7) That in the interest of Indian industries duty should be charged on goods belonging to the Government. (Page 154, para. 285.)

3. We presume that Government will have no difficulty in agreeing with the propositions stated so emphatically and unanimously, by the Commission, *viz.*, that the steel industry is essential for purposes of national defence and that there are no natural obstacles to its development in India. They cannot so soon have forgotten the experience of the late war. Without this steel works the campaigns in Mesopotamia, in Palestine and in East Africa could not have been fought successfully, and the Government of India have themselves declared this by the mouth of Lord Chelmsford, then Viceroy and Governor-General, when he visited the Works at Jamshedpur in 1919. Lord Chelmsford then said:—

> "I have come down here to-day in the first place to see this fine example of Indian industry. As you know, it is the policy of my Government to encourage all industries in India so far as is possible to do so. And I wanted to be able to see this fine example of Indian industry which has been set up at Sakchi. In the second place, I wanted to come here to express my appreciation of the great work which has been done by the Tata Company, during the past four years of this war. I can hardly imagine what we should have done during these four years if the Tata Company, had not been able to give us steel rails which have been provided for us not only for Mesopotamia, but for Egypt, Palestine and East Africa."

4. As to the second proposition, we may point to one fact which is, in our opinion, conclusive. Several of the large English Commercial firms in this country have already laid before Government in some cases in association with large steel manufacturers in England, proposals for the establishment of Steel Works in this country, and have obtained concessions of the necessary raw materials and of railway facilities for that express purpose. Presumably, therefore both they and Government were already satisfied before the issue of this report that there are no natural obstacles to the development of the industry in this country. In this letter we desire to deal with the question on general principles only, and we need not labour the point further. We are confident that within fifteen or twenty years the Indian manufacturer will not only be able to compete with any country in the world, but will be exporting large quantities of the material. The necessary raw materials exist in India in enormous quantities, and are one of the country's greatest natural assets. Such difficulties as exist can be conquered and will be conquered within a short time.

5. It remains for us to prove that the industry is in danger from foreign competition. We asserted this strongly last year and we gave our reasons in the letter referred to. But the position is now still more dangerous in spite of the increase in the duty imposed last year as a revenue measure. In the last few months the prices of imported steel in this country have reached a level with which we cannot compete. We know that these prices are lower than the prices at which similar material is sold in the country of origin and in many cases lower than the actual cost of manufacture. Imported steel is freely quoted in India at present at approximately Rs. 135 for Continental steel and Rs. 155 for British Standard per ton. We cannot manufacture at that cost, and our base cost at present is Rs. 175. We

have heard of quotations for British Standard rails at prices as low as Rs. 132 landed. We understand that the Bengal Nagpur Railway secured 8,500 tons at this price. Our present rails cost is Rs. 175. We are, it is true, supplying Government and the Indian Railways at prices much below this figure, but that is due to special circumstances, and we are making a steady and heavy loss on these supplies. The low price of imported steel in this country is due to many factors. Dumping plays an important part in it. Proof of dumping will always be difficult, but we think no more satisfactory proof can be afforded than the fact that for months the quotations in the English trade papers for export have constantly been at least thirty shillings a ton below the prices quoted for home consumption in that country. Our General Manager, Mr. T. W. Tutwiler, has only just returned from a visit to England where he went round several of the large Steel Works and he assures us that no one can possibly be making steel for less than £8 a ton. At that cost the prices at which steel is being sold in this country cannot be the result of fair competition. Depreciated exchanges also contribute to these low prices. Our information is that both France and Belgium are receiving coal from Germany as a part of the reparations and that such coal is paid for in marks. And depreciation of the mark has obviously placed German manufacturers in an exceptionally favourable position. We think the facts stated are sufficient to show that the industry is in danger and that such danger arises from dumping and from depreciated exchanges and unfair competition.

6. We shall however, certainly be asked, as we have been asked frequently, how it is that we cannot reduce our costs to meet this competition and it will be argued that, if we cannot do so, either the industry as managed by us seeks to make too high profits or is saddled with undue overhead charges. Our costs have increased greatly since the war, but that increase has been due to conditions mainly outside our control. We attach to this letter a statement giving a complete analysis of our costs showing this increase, but briefly it may be ascribed to the increased cost of Indian coal, the increased cost of Indian labour and the increase in the cost of railway services and foreign imports that have followed the war. Coal has increased from Rs. 4-1·92 per ton in 1916-17 to Rs. 9-3·25 per ton to-day and it takes four tons of coal to make one ton of finished steel. The increase is due to many general conditions of which the Railway Department of the Government of India must be well aware, but chiefly it is due to the increased cost of labour. Labour has increased by over 50 per cent. We are endeavouring, as the Government of India are aware, to reduce wages at our Works, but we are faced here with the same problem that to-day meets all Indian manufacturers, and the process must be gradual. Labour is not organized or educated in this country. We believe that it will be admitted by Government that the wages paid by the Railways are at present too high, but that it is impossible to reduce them except slowly and by gradual degrees because any such proposal would involve an immediate strike. We are in the same position as the Railways, but they are not subjected to foreign competition. Our overhead charges have not increased except in one respect. The only increase in wages given to our superior staff in the last five years has been one of ten per cent. on the total earnings. Our interest charges have, however, risen considerably. This increase again is due to causes entirely beyond our control. The value of our stocks has increased owing to the higher value of steel and iron, and we, therefore, require more working capital. On that larger working capital we have to pay a much higher rate of interest.

7. We have given this explanation of the increase in costs because we are aware that Government will require it, but we would point out that the recommendations of the Fiscal Commission do not lay down that the costs of the industry should be examined. Their recommendation is that, if the industry is essential for national defence and is in danger, it should be adequately protected. But we think that we have proved that our costs are not unduly high, if all Indian conditions are taken into consideration.

8. As regards the profits yielded by the industry in the past, we attach statement showing to date the total net profits made by our Company year by year and the distribution of these between dividends, depreciation and reserves. The amount set aside for depreciation and reserves works out to 42·6 per cent. per annum of the net profits over the whole period or 7·4 per cent. per annum on the total value of the machinery in operation from time to time, and this is not an unreasonable figure when the great wear and tear on our plant, resulting from the high pressure put upon it during the war by the demands of Government, is taken into consideration. The whole of the sum so set aside has been reinvested in the business and our plant is in consequence as good as new. In the steel industry very large reserves are necessary, as at any moment fresh discoveries and improved practice may render large and expensive plant out of date. We may give an instance of this; our drug ovens were specially constructed at a cost of Rs. 7,46,879 in the latter part of 1918 in order to meet the Government urgent demands for pig iron for war purposes. These have now been replaced by new ovens of a more economical type, and the major portion of that sum has now been written off within 3¾ years. Excluding the amounts written off for depreciation and reserve, the amount actually paid in dividends from the profits has amounted to 8·78 per cent. per annum on the whole capital invested over a period of 15 years. It cannot be said that, considering the large profits made by other industries, this amount shews any sign of undue greed on the part of the Steel Company's shareholders.

9. It remains for Government to examine the position from the general economic point of view, and to do so it must weigh up the advantages to the country and the losses that it would have to bear, if the protection we ask for is granted. In considering the economic gain to the country all direct or indirect contributions to its prosperity by the Steel Company should be taken into account. Such considerations are frequently lost sight of, and we, therefore, desire to state them. The Steel Company at present gives employment to approximately 40,000 men on its own pay roll and pays in wages more than one crore of rupees a year. In the past year it has paid in dividends and interest nearly Rs. 70 lakhs. If Government allows the steel industry to be ruined by the unfair competition to which we have referred and relies on foreign steel, the whole of that money will be lost to the country. In addition, in the year 1920-21 the Steel Company paid the following amounts either directly or indirectly to the Government:—

सत्यमेव जयते

	Rs.
Income-tax and Super-tax	10,84,000
Income-tax and Super-tax (Supplementary) .	63,000
Income-tax paid by employees	1,14,000
Post and Telegraph expenditure . . .	36,000
Indirect taxation, customs duty, cesses, etc. .	7,16,000
Railway freight on ingoing and outgoing material	31,23,000

or a total of over fifty lakhs of rupees annually. The total economic gain to India from the existence of the industry may be taken at Rs. 2 crores a year. In addition, we are at present supplying about 34,000 tons of rails to the Palmer Railways (Company Railways) at grossly inadequate prices owing to contracts which they have refused to revise. The Government of India, after careful examination so recently as June 1922, fixed the price at which rails of similar specification could be imported into India at Rs. 156, and allowed us this as a revised price. Our average price to the Palmer Railways is Rs. 122-8-0 a ton, and there is, therefore, a saving to India in the present year of Rs. 11,39,000. We are also supplying 15,000 tons of rails to the Bengal Nagpur Railway at an even lower price, *viz.*, Rs. 110. There is, therefore, a further saving here of Rs. 6,90,000. The total economic gain to India in terms of actual money alone may, therefore, be fairly estimated at over two crores of rupees a year even in a year such as the present.

10. In the past the gain has been far greater. During the war we supplied to Government 290,000 tons of steel at an average base price of Rs. 150. The only other source from which the Indian Government could have obtained supplies was the United States of America, and considering the exorbitant freight rates then prevailing, the material would have cost at least Rs. 200 a ton more. As a matter of fact, Government paid as much as Rs. 1,000 a ton and more for some steel during the war. In addition to the annual economic gain which we have estimated above at about two crores, there is here a definite money saving of six crores of rupees. But the strategic advantage of basing the campaigns in Mesopotamia and East Africa on steel supplied by India far outweighed any money saving, and could not be estimated in terms of money at all.

11. In the two years subsequent to the war further large sums were saved to India by our supplies of rails to the Government and to the Railways. In the statement attached, this has been shown to be at least one and a half crores in the years 1920-21-22. On these figures a moderate estimate of the economic gain to India resulting from the establishment of this industry for the past nine years will total fourteen crores in employment, wages, taxes, freight, etc., and seven and a half crores in actual money saved, or over twenty crores altogether.

12. So much for the past which we are afraid has been forgotten now that the urgent needs of war are over. For the future the annual figures will be much larger. Our output will be increased three times, and the total economic gain to the country will, therefore, be at least three crores annually in employment, wages, taxes, freight, etc. The capital invested in the industry in our Company will be about thirty crores, and may reasonably be expected to yield at least ten per cent., if the industry survives, or another three crores annually. If Government and the country allow the industry to be destroyed, this capital will be entirely lost, and will become unproductive, and the total loss to India would, therefore, be at least six crores annually.

13. On the other side, Government has to consider the effect of a protective duty. The present duty is 10 per cent., and this has been imposed for revenue purposes. We have repeatedly stated that in our opinion a duty of at least 33⅓ per cent. is necessary to ensure adequate protection. The annual consumption of steel in India may be taken roughly at one million tons yearly. When our Works are completed we shall be making 400,000 tons, or about half that quantity. The average base price of imported steel may be taken to-day at Rs. 120 per ton. It is not likely, in our opinion. to fall permanently below that figure, and that is approximately the price at which it is to-day coming into this country. Twenty-three and a third per cent. which is the additional protection for which we have asked on this price is Rs. 28 a ton. On a million tons, therefore, the additional economic burden on India will be two crores and eighty lacs of which this Company will obtain less than half, as compared with the economic gain of six crores annually we have shown above. We are confident that it is only necessary for us to state the problem in these terms in order to convince Government that no sound statesmanship would surrender an asset of such economic value, of such capital military importance, and which actually brings more to the country than an adequate protective duty would lose in order to placate the shibboleth of free trade.

14. But there is also another aspect. It is our firm belief that the difficulties under which the industry at present labours are only temporary. Already we can produce pig iron from our raw materials at prices which enable us to export freely in competition with America and England, and we are at present exporting over 9,000 tons monthly which may be valued at over six lakhs. In steel our difficulties are peculiar, and are chiefly caused by actual physical difficulties with the furnaces and by the high cost of imported labour. Both these difficulties can be remedied and are now being remedied. We have established a Technical College of a very high standard

to train the Indian to take the place of the expensive foreign workman. We are installing new steel furnaces of improved design and we are continually investigating and experimenting to improve the practice of the steel furnaces and to obtain raw materials of higher quality. We are confident that, if we are given time, we can correct these difficulties, and can lower our costs and our prices until not only shall we be able to face foreign competition without any protection of any sort whatever but we shall be able to enter the great markets of the world and compete in them with exporters from any country. The enormous economic advantages to India of such an export industry are obvious. We have said that we are confident that we can do this, if we are given time. But we are not being given time. This industry which has given so largely to the country, which has saved such huge sums for Government and the railways, which made the successful prosecution of the war in the East possible to the Empire, is being squeezed out of existence by the unfair competition to which we have referred and the laisser fair policy of our Government upto date. Practically every country in the world, except England and India, has protected or otherwise assisted this vital industry after the war. And in England the considerations that prevented its protection were the fact that England is a large exporting country and that its principal industry, ship-building, depends on supplies of cheap steel. Every Dominion has protected or assisted it, although their natural resources are not to be compared to ours.

15. During the war the Steel Company bore the heat and burden of the day. We drove our plant and our men to the utmost capacity to serve the needs of the Empire, we accepted a price which left a bare margin of profit. While the Jute Mills in Calcutta and the Cotton Mills in Bombay whose manufactures were equally necessary to the Government, while the Steel Works in England and elsewhere were allowed to make enormous fortunes for their shareholders and to build up huge reserves, this Company was strictly controlled. During the period commencing from 13th August 1907 on which date it received its capital money to 31st March 1922 the average interest paid in dividends, whether on Preference Shares, Ordinary Shares, Debentures or Deferred Shares, has worked out to 8·04 per cent. per annum on the total capital invested. The Steel Works with which it is now competing are drawing on their reserves. We have none, and the reason that we have none is our service to India and the Empire. Merely as a business proposition we point to the value of those services as a provision for the future.

16. We urge, therefore, that immediate action should be taken on the lines of the Fiscal Commission's Report in this instance in advance of the creation of the Tariff Board, and that Government should at once recommend to the Legislative Assembly an increase in the duty on steel to 33⅓ per cent., pending more detailed examination by the Tariff Board, when created, on the grounds that this industry essential to the military defence and the economic development of India is in danger, and should be adequately protected against dumping, against the depreciated exchanges and against unfair competition. The whole political sentiment of this country is in favour of protection, and we urge that no better case on which to test its reasoned opinion can be found. A delay even of six months while examinations are made and opinions are invited may so endanger the industry that we shall be forced to close down the manufacture of steel.

The Tata Iron and Steel Co., Ltd.

Open Hearth Steel Ingots Costs with " All in."

—	July 1916 to June 1917.		July 1917 to June 1918.		July 1918 to March 1919.		April 1919 to March 1920.		April 1920 to March 1921.		April 1921 to March 1922.	
	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.
Metal cost (Pig and Scrap)	25	13·16	28	15·43	35	14·25	35	9·53	38	9·84	39	14·56
Feeding materials	4	1·51	4	3·97	5	8·55	4	6·47	3	14·18	4	14·52
Labour	4	4·87	4	13·39	5	0·61	5	2·69	6	5·77	6	4·48
Stores	1	4·70	1	11·09	3	15·84	2	15·00	3	2·99	2	12·32
Refactories	0	15·33	0	14·01	1	5·71	1	8·88	1	11·44	2	15·68
Ingot Moulds and Stools	0	15·42	0	15·99	0	15·87	0	15·58	1	0·00	1	4·00
Relining fund	5	0·00	4	15·17	5	4·92	6	1·63	7	11·92	7	8·00
Gas producer	2	9·68	3	3·94	4	5·86	4	3·21	5	6·03	6	2·88
Service expenses	1	15·45	2	0·83	3	2·46	3	14·13	4	10·29	6	3·52
Interest	1	0·32	1	3·84	2	13·12	2	15·84	4	12·16	4	14·56
Bombay office expenses, Depreciation and Agents' Commission	8	13·12	7	7·20	8	1·60	10	1·76	10	1·60	9	1·60
TOTAL	56	13·56	60	8·86	76	8·79	77	14·72	87	6·22	92	1·12
CREDIT FOR SLAG	0	0·32	0	0·29	..		..		..		..	
NET COST	56	13·24	60	8·57	76	8·79	77	14·72	87	6·22	92	1·12

THE TATA IRON AND STEEL CO., LTD.

Blooming Mill Cost with " All in."

—	July 1916 to June 1917.		July 1917 to June 1918.		July 1918 to March 1919.		April 1919 to March 1920.		April 1920 to March 1921.		April 1921 to March 1922.	
	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.
Metal cost (Ingots)	62	8·38	67	4·57	85	5·77	87	0·80	95	15·35	101	14·42
Labour	1	5·37	1	3·35	1	1·80	1	2·84	1	8·86	1	11·52
Stores, tools supplies	1	8·66	1	5·25	2	8·44	1	10·73	1	12·42	1	6·40
Steam	0	12·77	0	15·20	1	3·59	1	2·77	1	9·00	2	0·00
Gas producer	0	12·84	0	11·14	0	14·15	0	13·09	1	1·64	1	4·80
Roll Account	0	4·00	0	3·81	0	2·69	0	3·47	0	4·00	0	4·00
Total service cost	0	13·55	0	12·65	1	2·96	1	1·98	1	4·11	1	4·69
Interest	0	4·48	0	5·76	0	12·50	0	13·80	1	5·34	1	6·46
Bombay expenses, Depreciation and Agents' Commission	2	7·36	2	2·72	2	4·10	2	14·26	2	13·33	2	9·68
TOTAL .	70	13·41	75	0·45	95	8·00	96	15·74	107	10·05	113	13·92

THE TATA IRON AND STEEL CO., LTD.

Rail Mill Cost with "All in."

—	July 1916 to June 1917.		July 1917 to June 1918.		July 1918 to March 1919.		April 1919 to March 1920.		April 1920 to March 1921.		April 1921 to March 1922.	
	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.
Metal cost (Blooms)	83	8·84	90	3·35	113	13·36	113	0·44	123	2·49	129	12·85
Labour	6	4·14	6	10·37	6	8·89	6	14·39	8	7·70	7	11·04
Stores and Tools supplied	2	9·82	3	11·42	6	14·11	3	14·07	3	9·75	2	15·04
Steam cost	1	6·81	1	12·15	2	2·57	1	15·26	2	11·52	3	2·72
Gas produce cost	0	13·63	0	11·79	0	14·27	0	13·31	1	1·34	1	2·72
Rolls	2	0·00	1	14·49	1	5·48	1	11·74	2	0·00	2	0·00
Total service cost	4	5·88	3	6·46	4	3·85	3	14·61	4	10·17	4	8·32
Interest	0	14·88	1	3·68	2	8·48	2	9·76	4	3·68	4	2·99
Bombay expenses, Depreciation and Agents' Commission	8	0·96	7	6·08	7	4·48	8	13·12	9	0·32	7	12·32
TOTAL COST	110	0·96	116	15·79	145	11·76	143	10·70	158	14·97	92	1·12

Steel Bounties.—While the Japanese shipbuilding bounty law of 1896 was suspended in 1918, the work which it was designed to accomplish is being carried forward by law dated August 1917 for the encouragement of the steel industry. This exempts from income taxes and business taxes all those engaged in steel industries and provides bounties for various domestic steel products. This resulted by 1921, in providing a domestic production of steel equal in volume to the amount of the imports.

Since 20th July 1921, the law encouraging the steel industry has been amended so that the bounties apply only to the steel products used in building, repairing naval vessels or merchants ships.

A bounty is provided for steel ingots and slabs made in Japan equal to 12 per cent. of the value of the imported steel ingots and slabs and a further bounty of 15 per cent. of the value of the imported article in case of bars, rods, shapes, tees, angles, ship-plates, sheet, tubes, pipes, and turbine blades made in Japan. These bounties are paid only when the articles are used in the shipyards. (*Iron Age*, New York, 28th September 1922.)

Production.

	Tons.
1914 Iron and Steel	89,890
1915 Iron and Steel	82,979
1916 Iron and Steel	378,118
1917 Pig	489,252
1918 Pig	694,880

Output of Pig Iron by Japanese controlled works would reach to 2,000,000.

CHINA.

Customs duties, etc., on iron and steel materials levied by the Chinese Government.

There is at present a 5 per cent. *ad valorem* duty on:—

(1) Bolts, Nuts and Washers.

(2) Crossings for Railways.

(3) Fishplates and Spikes.

(4) Pipes, Tubes, and Fittings (both plain and galvanized).

Specific duties are levied on the majority of iron and steel items. Government purchases are liable to the same duty as all others and native industries likewise pay regular tariff charges. (*Iron and Coal Trades Review*, London, 29th September 1922.)

Assisting Chinese Iron Works.—The Chinese Government has notified the Provincial Government that the Tayeh Iron Works has been exempted from export tax on iron and steel and also for a period of five years from provincial likin and other duties. (*Iron and Coal Trades Review*, London, 1st July 1921.)

Bounties are as follows:—

When the freight on sheets from British Ports is £2-10-0 per ton or under, bounty is £1-10-0;

when the freight on sheets from British Ports is above £2-10-0 per ton, bounty is £1-10-0 less the excess of freight over £2-10-0 per ton;

when the freight on galvanized sheets is £2-10-0 or under, the bounty is £2 per ton; and

when the freight on galvanized sheets is over £2-10-0 per ton, the bounty is £2 per ton less the excess of freight over £2-10-0 per ton. The bounty on galvanized sheets is inclusive of the bounty, if any, paid on the black sheets from which the galvanized sheets are made. (*Iron Age*, New York, 1st January 1920.)

Bounty on Iron and Steel.

In the Commonwealth Parliament recently Mr. Gregory called attention to the fact that the estimates provided £10,000 for iron and steel bounty and wished to know whether the Government intended to grant a bounty in addition to the assistance given by the tariff. The Minister for Trade and Customs (Mr. W. Massey Green) could not say off-hand what the position was. He believed the Government was under statutory obligation to pay a bounty in certain circumstances, but no applications were now being made and he was not aware of any claims of the kind in 1920. (*Ironmonger*, London, 7th January 1922.)

Some alterations in the Australian fiscal policy are indicated in a Bill introduced by the Commonwealth Government which would reduce the duty on certain articles.

	British Preferential.	Intermediate.	General.
Wire netting	free	5%	10%
Galvanized Iron . . .	20sh. per ton.	27/6 per ton.	30sh. per ton.

It is estimated that the duty remission will amount to £350,000. Bounties are however to be substituted in order to encourage manufacturers in Australia and the liability in this respect is estimated to be £250,000. (*Metal Bulletin*, London, 19th September 1922.)

The Iron and Steel Products Bounty Act 1922, assented to on 18th October 1922 authorises the Governor-General of Australia to pay bounty under certain prescribed conditions at the rates specified below on fencing wire, galvanized sheets and wire netting manufactured in the Commonwealth from materials produced or manufactured in the country or from such imported materials as may be warranted by the Minister of Trade and Customs and delivered from the Works on or after the 14th September 1922. No bounty is to be paid if the profits *exceed 15 pe rcent. per annum on the capital employed* and if the manufacturers do not sell the materials at reasonable price. The total amount in any one year shall not exceed £250,000. The schedule of bounties is as follows:—

Fencing Wire	£2-12s. per ton.
Galvanized sheets	£2-12s. per ton.
Wire netting	£3-8s. per ton.

(*Iron and Coal Trade Review*, London, 19th January 1923.)

In order to encourage the Australian steel industry, the Cabinet in spite of higher quotations from the Broken Hill Property Co. £12 per ton for rails) as compared with the Dorman Long Co., Ltd., Middlesborough £10-19-9 for Melbourne delivery), placed half the order with the Broken Hill Co., and the other half with the English Co. (*Weekly News Service* No. 39 dated London, 2nd November 1922.)

per annum on the capital invested. Further, it will be noticed that the Australian Government have on one occasion deliberately paid a higher price for rails made in the country than that quoted by English manufacturers in order to protect the industry. We have consistently in the past four years supplied the Indian Government and the Indian Railways at prices much below the price of imported rails.

In New Zealand £150,000 has been set apart for the payment of bounties on iron and steel produced in the country.

In South Africa bounties of 15s. per ton of iron and per ton of steel have been fixed by the Government.

In British Columbia a bounty of $3 per ton is given on pig iron.

In France a very high rate of duty has been imposed since the war on all imports. In addition, it will be noticed that the Railway rates on goods for export have been specially reduced in order to assist the local industries.

In Belgium an indirect bounty has been given to the manufacturers of iron and steel by a special reduction of railway rates which is equivalent to a subsidy of 30 francs per ton of pig, and steps have been taken to protect the industry by a high tariff.

In Spain a high tariff has been imposed specially in order to protect local industries which are suffering, as we are suffering, from an aggressive influx of foreign products.

In Italy a similar high tariff has been imposed in order to protect the industry as it is not in a position to fight foreign competition. In addition, Customs duties have been remitted on machinery imported for the industry and we would specially compare this with the treatment of the industry in this country where the import duties have in many cases actually been increased on materials required for the industry, as, for instance, sulphur. In Italy also exemption has been granted from income-tax and super-taxes.

In Japan similar steps have been taken. The tariff has been increased against foreign imports and bounties have been granted. Proposals have also been made to exempt the Steel Industry from taxes, but we have not been able to ascertain whether effect has been given to these.

These measures have all been taken since the war. In India alone nothing has been done and on the contrary we have been expected to supply our materials in many cases at prices far below the market price to the Indian Government and the Indian Railways. The point we wish to make here is this: it is true that many of these countries cannot compete in the Indian trade, but the fact that they have shut their doors to the countries which can compete inevitably forces the great bulk of competition upon this country where no adequate protection has as yet been afforded to the industry.

5. As we have already stated in our letter to the Government of India the Steel Industry is for other special reasons a fit case for protection; it is still an infant industry: we have not yet learnt the art of manufacture as Great Britain, the United States and other countries have; we are still obliged to import skilled labour. For all these reasons we cannot compete with foreign goods. But the Steel Industry is not one which will for ever require protection; we have abundant raw material; we have demand for our goods; we are taking every possible measure and at great cost to teach the art of manufacture to Indians thereby dispensing with foreign labour and lessening costs.

While we are doing this we require protection. The case of the United States is exactly parallel. Great Britain and other countries knew the art of manufacture long before the United States did and could import into the United States steel cheaper than the United States itself could produce. The United States Government considered this a fit case for protection. We

D.—G. I. P. RAILWAY.

1920-1921.	C. I. F. PRICE OF		PRICE RECEIVED.		TONNAGE SUPPLIED.		DIFFERENCE BETWEEN THE C. I. F. PRICE AND THE PRICE RECEIVED.	
	Rails.	Fish-plates.	Rails.	Fish-plates.	Rails.	Fish-plates.	Rails.	Fish-plates.
	Rs.	Rs.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
1st Quarter . .	251·38	302·89	162	192	4,169	..	3,75,865·22	..
2nd „ . .	308·85	373·57	..	..	..	..	..	..
3rd „ . .	375·94	453·41	..	..	..	..	..	..
4th „ . .	348·98	437·14	179	209	3,559	..	6,65,461·82	..
					7,728	*Nil*	10,41,827·04	*Nil*

16th October 1922.

सत्यमेव जयते

SUMMARY.

Saving on cost of rails to State and Company Railways as compared with c. i. f. prices of English rails.

PARTY.	1920-1921.	1921-1922.
	Rs.	Rs.
A. Railway Board	36,34,641·52	16,12,250·9
B. Palmer Railways.	30,82,659·10	11,79,764·5
C. B. N. Railway	27,14,078·12	9,37,383·7
D. G. I. P. Railway	10,41,327·04	*Nil.*
	1,04,72,705·78	37,29,399·1
	TOTAL RUPEES .	1,42,02,104·88

16th October, 1922.

per annum on the capital invested. Further, it will be noticed that the Australian Government have on one occasion deliberately paid a higher price for rails made in the country than that quoted by English manufacturers in order to protect the industry. We have consistently in the past four years supplied the Indian Government and the Indian Railways at prices much below the price of imported rails.

In New Zealand £150,000 has been set apart for the payment of bounties on iron and steel produced in the country.

In South Africa bounties of 15*s*. per ton of iron and per ton of steel have been fixed by the Government.

In British Columbia a bounty of $3 per ton is given on pig iron.

In France a very high rate of duty has been imposed since the war on all imports. In addition, it will be noticed that the Railway rates on goods for export have been specially reduced in order to assist the local industries.

In Belgium an indirect bounty has been given to the manufacturers of iron and steel by a special reduction of railway rates which is equivalent to a subsidy of 30 francs per ton of pig, and steps have been taken to protect the industry by a high tariff.

In Spain a high tariff has been imposed specially in order to protect local industries which are suffering, as we are suffering, from an aggressive influx of foreign products.

In Italy a similar high tariff has been imposed in order to protect the industry as it is not in a position to fight foreign competition. In addition, Customs duties have been remitted on machinery imported for the industry and we would specially compare this with the treatment of the industry in this country where the import duties have in many cases actually been increased on materials required for the industry, as, for instance, sulphur. In Italy also exemption has been granted from income-tax and super-taxes.

In Japan similar steps have been taken. The tariff has been increased against foreign imports and bounties have been granted. Proposals have also been made to exempt the Steel Industry from taxes, but we have not been able to ascertain whether effect has been given to these.

These measures have all been taken since the war. In India alone nothing has been done and on the contrary we have been expected to supply our materials in many cases at prices far below the market price to the Indian Government and the Indian Railways. The point we wish to make here is this: it is true that many of these countries cannot compete in the Indian trade, but the fact that they have shut their doors to the countries which can compete inevitably forces the great bulk of competition upon this country where no adequate protection has as yet been afforded to the industry.

5. As we have already stated in our letter to the Government of India the Steel Industry is for other special reasons a fit case for protection; it is still an infant industry: we have not yet learnt the art of manufacture as Great Britain, the United States and other countries have; we are still obliged to import skilled labour. For all these reasons we cannot compete with foreign goods. But the Steel Industry is not one which will for ever require protection; we have abundant raw material; we have demand for our goods; we are taking every possible measure and at great cost to teach the art of manufacture to Indians thereby dispensing with foreign labour and lessening costs.

While we are doing this we require protection. The case of the United States is exactly parallel. Great Britain and other countries knew the art of manufacture long before the United States did and could import into the United States steel cheaper than the United States itself could produce. The United States Government considered this a fit case for protection. We

B.—DEBENTURE LOAN.

DATE.	AMOUNT.
1911	Rs.
September 30th	12,50,000
October 31st	12,50,000
November 30th	12,50,000
1912	
January 3rd	12,50,000
December 19th	10,00,000
1916	
April 1st	5,50,000
April 8th	10,50,000
November 25th	25,00,000
1917	
September 1st	25,00,000
1918	
May 1st	25,00,000
1919	
January 2nd	25,00,000
September 4th	10,00,000
October 14th	14,00,000
Total Rupees	2,00,00,000

सत्यमेव जयते

C.—INTEREST ON DEBENTURE LOAN.

YEAR.	AMOUNT.		
	Rs.	A.	P.
1911/1912	1,71,874	15	9
1912/1913	3,04,270	13	4
1913/1914	3,30,000	0	0
1914/1915	3,30,000	0	0
1915/1916	3,50,852	14	0
1916/1917	4,30,660	2	9
1917/1918	7,18,000	0	0
1918/1919	6,87,575 for 9 months.	5	5
1919/1920	10,91,561	10	3
1920/1921	11,62,000	0	0
1921/1922	11,62,000	0	0
Total Rupees	67,38,795	13	6

18th October, 1922

on all stores of Railway materials imported by Government for its own use. It is also essential that the protection afforded should be increased proportionately with any rise in exchange as such rise would make the protection valueless.

Q. 43. Are you interested in any industry and if so, in what capacity?

A. Yes. The Iron and Steel trade. I am a Director of the firm of Tata Sons, Ltd., who are the Managing Agents of the Tata Iron and Steel Co., Ltd. I have also been authorised by the Steel Company to give evidence as their representative.

Q. 44. Do you consider that there are natural advantages for the industry in India? If so, please enumerate them.

A. The iron ore resources of India are enormous and are readily accessible. The percentage of iron in the ore is exceptionally high, much higher than is usual in Europe or America.

Dolomite, limestone and coking coal in large quantities exist close to the deposits of ore. The coal is not of the highest class but its close proximity to the deposits of ore more than offsets this disadvantage.

Q. 45. Do you consider that the industry is essential to the national security or of substantial importance to the economical prosperity of India?

A. Yes. The first part of the question cannot be better answered than by a quotation from the speech delivered by Lord Chelmsford, late Viceroy of India, when he visited Jamshedpur in January 1919. He said: "I can hardly imagine what we should have done during these years if the Tata Company had not been able to give us steel rails which have been provided for us, not only for Mesopotamia but for Egypt, Palestine and East Africa."

From the beginning of the war to the end, the Company supplied to the Government about 291,562 tons of steel material in the shape of rails, shell steel and structural material at an average base price of less than Rs. 150 per ton. If this pioneer Steel Works had not existed, this supply would have had to be obtained from the United States, as the English Works were busy with urgent Munition work of their own. The average price at which the Government could have secured their requirements from the States would have been at least Rs. 200 per ton more than what they have paid to this Company, considering the high level of prices obtaining in the States and the exorbitant freight and insurance rates. In other words, the establishment of these Works before the war enabled Government to save about six crores of rupees and, what was far more important, to base the successful campaigns in Mesopotamia, Palestine and East Africa in this country and avoid the dangers of the maritime transport of this essential material through the Mediterranean which was infested by enemy submarines. This strategic advantage far outweighed any saving in money.

Q. 46. What is the state of organisation and equipment of the industry in India as compared with that in other countries?

A. This industry in India is still in its infancy. It was with very great difficulty and after repeated failures in securing the necessary capital, that in August 1907 the Tata Iron and Steel Company was successfully registered. The construction period itself took between 4 and 5 years, and when the operation began, the utmost difficulty was experienced in manufacturing iron and steel of good quality. Even when the necessary standard was attained, the cost of production was so high that it was impossible to compete with foreign imports. At this time, however, the war intervened and acted as an accidental protection to the Steel Company, all imports having ceased and our Works being mostly employed in supplying steel to Government and, to a limited extent, to the open market. With the cessation of war and the declaration of peace, the position has reverted to what it was before, namely competition with foreign imports at unusually low prices.

As regards organisation and equipment, though 11 years have passed since operation was started, this industry cannot be said to be on a stable footing, for the important reason that with the exception of the Coke Ovens

INDIA.

Import duty on Iron and Steel.

Description of Material.	1900 to 1916	1-3-1916 to 28-2-1921	1921 to 1922	1922 to 1923	1923 to 1924
(1) Pig Iron, angle, tees, bars, channels, beams, joists, pillars, girders, bridge-work and such other descriptions of iron or steel imported exclusively for building purposes, hoops and strips, rails, fishplates, sleepers, spikes, switches, crossings, sheets and plates, ingots, blooms, billets and slab, etc.	1%	2½%	2½%	10%	10%
(2) Railway material for permanent way and rolling stock, namely, girders and other materials for bridges, rails, sleepers, fishplates, fish-bolts, chairs, spikes, etc. .	Free	2½%	2½%	10%	10%
(3) Iron or steel, all other sorts and wire netting . . .	5%	7½%	11%	15%	15%
(4) Iron or steel drums or cans, tinned other than petrol tins of 2 gallons capacity	5%	7½%	11%	15%	15%
(5) Iron or steel cans and drums not tinned of two gallons capacity and drums of 4 gallons capacity . . .	5%	7½%	11%	15%	15%
(6) Iron or steel discs or circles	5%	7½%	11%	15%	10%

UNITED KINGDOM.

"The Safeguarding of Industries Act," 1921, provides for the imposition of an import duty of 33⅓ per cent. of the value of imported articles whose manufacturing cost in the country of origin exceeds the imported price and also on certain articles for the protection of Key industries.

During the war, *i.e.*, from May 1916 to 30th April 1919 the prices of *pig and steel materials* were controlled. In order to balance this, certain rebates and subsidies were granted when the price of raw materials from which the finished products were manufactured and the freights of raw materials exceeded the rates mentioned in the agreement entered into with the Ministry of Munitions and Manufacturers. The subsidies were abolished in 1921.

The subsidies on steel were £2-10-0 per ton (*Iron Age*, 1st January 1920).

The extensive system of subsidies and rebates which grew out of the decision to fix the prices of iron and steel during the war period became so involved that even the Auditor-General could not carry out a detailed audit and had to accept the certificates of the Ministry's accountants. It is estimated that the annual sum to be paid under the various schemes in connection with iron and steel amounted to £47,000,000 a large part of which, however, represented allowance on freight for imported ores (*Ironmonger*, 17th May 1919). No such subsidy was allowed in India.

CANADA.

Duties on Iron and Steel.

Year.	Pig Iron.		Steel Ingots and Castings.		Rails.	
	Duty.	Bounty.	Duty.	Bounty.	Duty.	Bounty.
1870-1878	Free	...	5%		Free	
1879	„	...	5%		„	
1880	$ 2	...	12½%		...	
1881	„ 2	...	„		...	
1882-1883	„ 2	$ 1·75	„		10%	
1884	„ 2	„	„		Free	
1885-86	„ 2	„	„		„	
1887	„ 2	„	„		„	
1888	„ 4	„	$ 9		$ 6	
1889	„ 4	„	„		„	
1890-1892	„ 4	$ 1	„		„	
1893	„ 4	„ 2	„	$ 2	„	
1894	„ 4	„	„		„	
1895	„ 4	„	$ 5	„	...	
1896	„ 4	„	„	„	20%	
1897	$ 2·50 General; $ 2·25 Intermediate; $ 1·50 Preferential.	„	$ 2	„	„	
1898	„	$ 3	„	$ 3	„	
1899	„	„	„	„ 2	„	
1900	„	„	„	„ 3	„	
1901-1902	„	„	„	„	„	
1903	„	$ 2·75	„	$ 2·75	„	
1904	„	„	„	„	$ 4·50 Preferential; $ 6·00 Intermediate; $ 7·00 General.	$ 3 faulty working of the Act.
1905	„	$ 2·25	„	$ 2·50	„	„
1906	„	„ 1·50	„	„ 2·00 (nearly)	„	$ 3 (Six months).
1907	„	„ 2·25	„	„	„	
1908	„	„ 2·25	$ 2·50 General; $ 2·25 Intermediate; $ 1·50 Preferential.	„	„	
1909	„	$ 2 (nearly)	„	$ 1·25	„	
1910	„	$ 0·75	„	„ 0·75	„	
1911-1921	„	...	„	...	„	

1914-1921 Duty on Beams, Angles and Channele not heavier than 35 lbs. per lineal yard, preferential $ 4·25; Intermediate $ 6·00; General $7-00. (*Weekly News Service* 19 of 6-5-21.)

सत्यमेव जयते

Anti-Dumping and Depreciated Exchange in Canada.

The financial proposals outlined in the Budget speech on May 1921, included alterations to the anti-dumping and depreciated exchange provisions of the tariff. The effect will be that imports from the United States will pay duty on their value in Canadian currency which would mean an addition of about 10 per cent. to the dutiable value of goods. In case of depreciated exchanges not more than 50 per cent. of the depreciation should be taken into account in valuing goods for duty. Thus in case of German goods in place of the value of a consignment worth 1,000 marks being converted into Canadian currency at the current rate of exchange, which would mean about $20 duty would be payable on not less than $120. (Bulletin No. 25 of 1921.)

In a comprehensive Report dealing in great detail with the Canadian Iron and Steel Industry recently issued by the Dominion Bureau of Statistics at Ottawa, it is recorded that the Canadian iron and steel industries had in 1920 an aggregate capitalisation amounting to $642,904,322 which was invested in 1,475 establishments employing during the year 102,661 workers, the total of whose wages reached $132,885,132. The capital was invested in 677 partnerships and individual ownerships and 750 incorporated companies and the total par value of issued shares amounted to $392,651,795 (including $17,655,219 held by residents of Great Britain).

The Iron and Steel industries of Canada in 1920 utilised materials costing in all $321,298,396, and the gross value of the products turned out amounted to $640,233,785, which figure covers the value of goods passing through the hands of several manufacturers at different stages. The net value of the 1920 production in the iron and steel series is, however, calculated to have been $318,935,889. Monthly imports of iron and its products in 1920 averaged $21,287,964, and monthly exports of iron and steel products during the same year averaged $7,942,068.

The relative importance of the different groups of industries producing or utilising iron and steel in Canada in 1920 is indicated by the following table:—

Distribution.	Establishments.	Capital invested.	Value of products.
	No.	Dollars.	Dollars.
Blast furnaces and steel mills . . .	50	119,761,718	138,882,823
Foundries and machine shops . . .	531	68,346,628	76,766,903
Iron and steel fabrication	55	12,355,869	14,318,605
Boilers and engines	55	32,662,552	22,614,951
Agricultural Implements	99	110,868,713	50,301,302
Machinery	156	52,066,936	40,535,474
Motors and cycles	84	72,252,428	123,148,203
Cars and car parts	21	66,951,866	60,359,520
Heating and ventilating	55	28,910,344	23,125,680
Wire and wire goods	45	18,339,020	30,254,349
Sheet metal products	122	27,589,735	37,369,576
Hardware and tools	152	32,798,513	22,556,316

सत्यमेव जयते

The capital invested in Canadian iron and steel industries rose from $61,800,987 in 1900 to $642,904,322 in 1920; the gross value of products from $48,271,553 to $640,233,785; and the total value added by manufacturing processes from $27,447,102 to $318,935,389. (*Iron and Coal Trades Review*, 20th April 1923.)

Production.

	1894 Tons	1900 Tons	1920 Tons
Pig Iron . . .	......	86,090	973,498
Steel (Ingots) . .	25,685	......	1,198,939

This expansion is clearly due to the measures taken by the Canadian Government in the shape of tariff duties or bounties in order to foster and develop the industry.

Notes from Canada.

Tariff and Taxation Changes.—The fiscal changes announced by Hon. W. S. Fielding, Canadian Finance Minister, in his Budget speech on May 11, were comparatively slight. The small number of reductions made is a disappointment to the Western representatives of the farmer's party. The most noteworthy feature was an increase in the British preference in the form of a 10 per cent. discount on the duty payable under the preferential tariff, coupled with the proviso that the goods must be conveyed without transhipment into a Canadian port. The tariff changes became effective on May 12. (*The Ironmonger*, London, 2nd June 1923.)

Increased Protection Demanded.—The Canadian Manufacturers' Association demands increased protection and opposes the extension of preferences in favour of British goods unless Britain gives preference to Canadian goods in return. It is contended that at present Canadian manufacturers are unable to withstand British competition in their own market, because labour costs and general working expenses are much lower in Britain than in Canada and the ocean freight rates have been so much reduced that British goods are being laid down in Canada at prices which Canadian manufacturers cannot meet. (*The Ironmonger*, London, 16th June 1923.)

AUSTRALIA.

Import duties on Iron and Steel.

	Preferential per ton.	Intermediate per ton.	General per ton
Pig Iron	20 sh.	30 sh.	40 sh.
Beams, channels, joists, girders, columns	48 ,,	75 ,,	90 ,,
Rails 50 lbs. and upwards . . .	35 ,,	60 ,,	75 ,,
Rails below 50 lbs.	45 ,,	70 ,,	85 ,,
Fishplates	48 ,,	..	95 ,,
Tie bars	48 ,,	..	95 ,,
Dogspikes	4–6d. per cwt.	..	6 ,, per cwt.
Fish bolts	30%	..	44%
Switches, Points and Crossings . .	30%	..	44%
Plates and sheets up to 1·16″ thick .	Free	5%	10%
Plates and sheets up to 1·16″ thick after January 1922	65 sh.	82·6 sh.	100 sh. (will not come into force up to 31-3-23).
Plates and sheets (1·16″ above) . .	Free	5%	10%
,, ,, from January 1922 . .	48 sh.	68 sh.	85 sh. (will not come into force up to 31-3-23).
Ingots, blooms and billets	32 ,,	..	65 sh.
Hoops	Free	5%	10%
,, On and after January 1922 .	70 sh.	90 sh.	100 sh.
Tinplates after January 1922 .	76 ,,	90 ,,	100 ,,
Cable	35%	40%	45%

Bounty on Sheet Manufacture.

The Australian Act granting a bounty for the manufacture of black steel sheets and galvanized sheets from the Native ore and from steel manufactured in the country and from such imported sheet bars as may be authorised, was passed on 20th December 1918. The period was to end on 30th September 1923. Payments should not be more than £40,000 in any one year. No bounty is to be paid if the profits exceed 15 per cent per annum. The bounty varies according to the fluctuations in freight from ports in Great Britain from which sheets are usually shipped to Australia.

सत्यमेव जयते

Bounties are as follows:—

When the freight on sheets from British Ports is £2-10-0 per ton or under, bounty is £1-10-0;

when the freight on sheets from British Ports is above £2-10-0 per ton, bounty is £1-10-0 less the excess of freight over £2-10-0 per ton;

when the freight on galvanized sheets is £2-10-0 or under, the bounty is £2 per ton; and

when the freight on galvanized sheets is over £2-10-0 per ton, the bounty is £2 per ton less the excess of freight over £2-10-0 per ton. The bounty on galvanized sheets is inclusive of the bounty, if any, paid on the black sheets from which the galvanized sheets are made. (*Iron Age*, New York, 1st January 1920.)

Bounty on Iron and Steel.

In the Commonwealth Parliament recently Mr. Gregory called attention to the fact that the estimates provided £10,000 for iron and steel bounty and wished to know whether the Government intended to grant a bounty in addition to the assistance given by the tariff. The Minister for Trade and Customs (Mr. W. Massey Green) could not say off-hand what the position was. He believed the Government was under statutory obligation to pay a bounty in certain circumstances, but no applications were now being made and he was not aware of any claims of the kind in 1920. (*Ironmonger*, London, 7th January 1922.)

Some alterations in the Australian fiscal policy are indicated in a Bill introduced by the Commonwealth Government which would reduce the duty on certain articles.

	British Preferential.	Intermediate.	General.
Wire netting	free	5%	10%
Galvanized Iron . . .	20sh. per ton.	27/6 per ton.	30sh. per ton.

It is estimated that the duty remission will amount to £350,000. Bounties are however to be substituted in order to encourage manufacturers in Australia and the liability in this respect is estimated to be £250,000. (*Metal Bulletin*, London, 19th September 1922.)

The Iron and Steel Products Bounty Act 1922, assented to on 18th October 1922 authorises the Governor-General of Australia to pay bounty under certain prescribed conditions at the rates specified below on fencing wire, galvanized sheets and wire netting manufactured in the Commonwealth from materials produced or manufactured in the country or from such imported materials as may be warranted by the Minister of Trade and Customs and delivered from the Works on or after the 14th September 1922. No bounty is to be paid if the profits *exceed 15 per cent. per annum on the capital employed* and if the manufacturers do not sell the materials at reasonable price. The total amount in any one year shall not exceed £250,000. The schedule of bounties is as follows:—

Fencing Wire	£2-12s. per ton.
Galvanized sheets	£2-12s. per ton.
Wire netting	£3-8s. per ton.

(*Iron and Coal Trade Review*, London, 19th January 1923.)

In order to encourage the Australian steel industry, the Cabinet in spite of higher quotations from the Broken Hill Property Co. £12 per ton for rails) as compared with the Dorman Long Co., Ltd., Middlesborough £10-19-9 for Melbourne delivery), placed half the order with the Broken Hill Co., and the other half with the English Co. (*Weekly News Service* No. 39 dated London, 2nd November 1922.)

English Competition in Australia.

Mr. Cecil Hoskins of Hoskins' Iron Works said that the year through which the industry had passed had been a severe one but his firm had now a fair quantity of work. English competition in the iron and steel industry has been felt very severely but the reason they were not suffering from it to any extent, was *that the New South Wales Railways Commissioners had given them a preference over the imported article.* (*Weekly News Service* No. 18 of 3rd May 1923.)

Dumping Duty.

The Customs Tariff Act 1921 passed by the Commonwealth of Australia in December 1921 contains the following provision:—

> "If the Minister is satisfied, after inquiry and report by the Tariff Board, that goods exported to Australia which are of a class or kind produced or manufactured in Australia, have been or are being sold to an importer in Australia at an export price which is less than the fair market value of the goods at the time of shipment and that detriment may thereby result to an Australian industry, the Minister may publish a notice in the Gazette specifying the goods as to which he is so satisfied."
>
> "Upon the publication of the notice, there shall be charged and collected on those goods imported into Australia a special duty called the Dumping Duty."

A Dumping Duty will be levied representing the difference of the market value in the United Kingdom and export price.

Original Plant of the Newcastle Works of the Broken Hill Property Co., Ltd., consisted of the following which was completed in 1913:—

(1) One Blast Furnace, 350 tons with necessary bye-product ovens.
(2) Three 65 ton Basic O. H. Furnaces.
(3) One 35″ Blooming Mill.
(4) One 28″ Mill.

The Works consisted of the following in the year 1922:—

(1) Coke Ovens Department with 224 Semet-Solvay bye-product ovens.
(2) Three Blast Furnaces (3,000 tons a week).
(3) Seven O. H. Furnaces (36,000 tons per month).
(4) One Blooming Mill and one 28″ Mill (1,000 tons a day of 80-lb. rails).
(5) Merchant Mill 3 mills.

Plans for further additions had been prepared and a large part of the equipment purchased for the following extensions to the Works:—

(1) Additional O. H. Furnaces to convert 550,000 tons of basic pig into steel.
(2) 40″ Blooming Mill.
(3) Morgan Continuous Billet and Sheet Bar Mill.
(4) A Morgan 10″ Continuous Merchant Mill.
(5) Additional Power House.
(*Iron Age*, New York, 29th June 1922.)

This expansion is largely due to Government help in granting bounties and imposing high tariffs on iron and steel materials.

Protecting Home Markets.—The Commonwealth Customs authorities have taken action aiming to bring the following articles under the anti-dumping provisions of the Customs Duties (Industries Preservation) Act: Steel exported from Czeco Slovakia as from December 12, 1922; enamelled ware exported from Czeco Slovakia as from August 9, 1922; wire nails exported from the United States of America as from November 7, 1922; electric welding machines exported from Germany as from November 14, 1922; electric iron exported from Germany as from December 2, 1922; enamelled ware exported from Germany as from October 10, 1922. (*Ironmonger*, London, 23rd June 1923.)

NEW ZEALAND.

Bounties in New Zealand for Iron and Steel.—The Iron and Steel Act of 1914, which set aside *£150,000 for the payment of royalties of 12s. per ton for Pig Iron puddled bar iron and steel produced from bar iron and 24s. per ton for steel* produced direct from the furnace in New Zealand, has been extended to the year 1931. The bounties cover iron produced from iron ore and iron sand. (*Bureau of Information* No. 3 of 3rd February 1921.)

New Zealand Preferential Tariff.—A cable from Wellington, New Zealand states that the new tariff introduced into the House of Representatives gives a large measure of preference to British Dominions. (*Iron and Coal Trades Review, London*, 11th November 1921.)

Import Duty.	British.	Foreign.
Iron, plain sheet, plain plate and hoop, whether black, polished enamelled plated, tinned, galvanized or otherwise coated with metal not elsewhere included, rolled chequered iron plates plain black	free	20% ad valorem except hoop 6" in width and over
Metal, not elsewhere included plain sheet, plain plate and hoop whether in rough polished enamelled plated tinned, galvanized or otherwise coated with metal .	free	10% ad valorem
N.B. Over and above the Import duty 1% Primage duty is payable (*Metal Bulletin* 21-2-22).		
Cast pipe not exceeding 5-16" dia.	20%	30%.
Cast and wrought pipe	free	20%.
Plain metal wire and barbed fencing wire .	free	10%.

SOUTH AFRICA.

The Iron and Steel Bounties.—The Board of Trade and Industries which was instructed to frame a scheme setting out the amounts of bounties which should be given to the South African Iron and Steel Industry, suggested that a bounty of 1*s*. 6*d*. a ton for the first 3 years, 15*s*. per ton for the next 3 years, and the annual reduction of 2*s*. 6*d*. a ton till the payment of bounties ceases after 11 years. The Board was convinced that the successful operation of the Industry requires not bounties, but cheap railway rates and the establishment of other industries. (*Ironmonger*, London, 5th August 1922.)

In view of the recommendations of the Board, the Government by the Iron and Steel Industry Encouragement Act, fixed the following bounties which may be paid in respect of Pig Iron and Steel produced in the Union from ores mined in the Union.

Financial Year	Per ton of Pig Iron produced.		Per ton of steel produced	
	sh.	*d.*	*sh.*	*d.*
1924-27	15	0	15	0
1927-28	12	6	12	6
1928-29	10	0	10	0
1929-30	7	6	7	6
1930-31	5	0	5	0
1931-32	2	6	2	6

(*Ironmonger*, London. 11th November 1922.)

Import Duty on Enamelware 20 per cent. (less 3 per cent. for British goods).

The policy of granting subsidies for the purpose of lowering prices was introduced during the War. Subsidies were entirely abolished in 1921.

BRITISH COLUMBIA.

Pig Iron Bounties in British Columbia.

Pig Iron from ore mined in British Columbia	$ 3 per ton.
Pig Iron produced outside of the province	$1·50 per ton.

(*Ironmonger*, London, 2nd April 1921.)

FRANCE.

French Duties Re-established.—A French decree of the 18th December 1921, published in the Journal Official for 27th December 1921, re-establishes with the corresponding co-efficient, the import duty on rails, fishplates, bridges and parts thereof which was suspended by decree of 30th November 1914 and 13th March 1915, in cases where such materials were required for repairs on railways, etc., necessary for national defence.

Duty on heavy structural iron and steel is 12 francs for 100 kilos with a co-efficient of 3, which makes the duty now in force 36 francs for 100 kilos or $3·15 per 100 lb. or 360 francs per ton. (*Iron Age*, New York, 6th January 1921.)

The new French Tariff on Imports from the United States which became effective from 1st May 1921, represents an average increase of 67·5 per cent. over the Tariff prevailing on 1st April 1921 and from 67·5 to 82·5 per cent. increase over the 1914. Tariff Duties exacted on importations from Germany are about 50 per cent. higher. There is a free list on importations from Italy and Spain which have free lists on French importations and a lower tariff prevails with Great Britain. (*Iron Age*, New York, 26th May 1921.)

French Duty on Tinplates.

Pre-war 13 francs for 100 kilos	130 francs per ton.
1920 26 francs for 100 kilos	260 francs per ton.
Sept. 1921 39 francs for 100 kilos . . .	390 francs per ton.

(*Metal Bulletin*, London, 19th July 1921.)

System of granting subsidies and rebates during the war period was introduced in order to fix the prices of iron and steel. Subsidies were entirely abolished in 1921. (*Times of India*, 14th March 1923.)

Lower Railway Rates.—Certain railway rates on goods going to the frontier for export, were reduced. In a few weeks it was expected that further changes would be made with a view to the whole tariff being modified, in order to assist local industries depending for their welfare upon chief freightage for raw materials or finished articles. (*Ironmonger*, London, 7th January 1922.)

Production.

	1888.	1902. T. Metric.	1922. T. Metric.
Pig		2,405,000	4,878,000
Steel ingots .	591,000		4,351,000

सत्यमेव जयते

BELGIUM.

Import Duty.

Pig Iron . . .	2 francs per ton	*Iron and Coal Trades' Review*, London, 24-6-21.
Finished Steel . .	30 francs per ton	

State Aid.—The Belgian manufacturers succeeded in persuading the Government though there was a big deficit on the Railways, *to cut down the freights on Lorraine ore from frontier to Liege or Charleroi from 19 francs per ton to 9 francs per ton, which was equivalent to 30 francs per ton of pig. The Government agreed and to that extent had given a subsidy to the Belgian manufacturers.* (*Ironmonger*, London, 9th April 1921.)

To avert the menace to Belgian industry due to a large influx of German products, following upon the depreciation of the Mark, the Belgian Government is reported to have decided to impose on such goods over and above the ordinary tax an *ad valorem* super tax not exceeding 20 per cent. It is probable that this measure will come into operation almost immediately and in order to avoid fraud the Government will insist on certificates of origin. (*Iron and Coal Trades Review*, 11th November 1921.)

The policy of granting subsidies for the purpose of lowering the prices was introduced during the War time. Still it is granted but the amounts expended have been considerably reduced. (*Times of India*, 14th March 1923.)

Belgian manufacturers were not heavily taxed during 1919 and 1920 and with low costs had received very high prices and had therefore accumulated funds from which they can carry on temporarily at a loss. (*Iron and Coal Trades Review*, London, 17th June 1921.)

Protection in Belgium.—At a meeting of the Belgian Cabinet it was decided to protect the home industry against Germany and other ex-enemy countries with a debased currency. (*Iron and Coal Trades Review*, London, 4th November 1921.)

सत्यमेव जयते

Production.

Pig Iron . . .	1894	T.	818,000	1922	T.	1,544,000
Steel ingots . .	1912	T.	2,472,000	1922	T.	1,454,600

SPAIN.

The preamble to the Royal decree recalls the facts that in order to protect national industries, the duties on a considerable number of articles were increased by a decree dated 26th November 1920. Further measures to this end must however be taken as all branches of industry are suffering from an aggressive influx of foreign products, facilitated by the general post-war economic situation and the disturbance of the normal international currency exchange relations.

The following came into force from 1st May 1921 :—

	Gold pedestles for 100 kilos.
Pig Iron	4·06=40·6 per ton
Rails weighing 25 kilos or more per metre	9·24=92·4 „ „
„ „ less than 25 kilos per metre and grooved rails .	12·88=128·8 „ „
Bars of any section not polished, galvanized or tinned . .	20·00=200·0 „ „
Plates or sheets more than 5 mm. in thickness . . .	21·00=210·0 „ „
Plates or sheets from 1 to 5 mm. thickness	23·00= 230·0 „ „
Plates or sheets less than 1 mm. thickness	26·00=260·0 „ „
„ „ polished, engraved, galvanized, coated with lead, corrugated or worked in any other way but not manufactured Polished bars	29·00=290·0 „ „
Tinplates or plates or sheets coated with tin	25·00=250·0 „ „
Sleepers, tie rods, fishplates	14·00=140·0 „ „

(*Iron and Coal Trades Review*, London, une

The duty on imports from United States of America averages 50 per cent. lower than the new General rates.

	New rates in pedestles per 100 kilos.	Old min. rates in pedestles per 100 kilos.
Pig Iron	8·12	1·40
Rails	18·06	4·20
Tinplate	50·00	14·00
Structural Steel	50·00	17·00

(*Iron Age*, New York, 2nd June 1921.)

Production.

	1904. T.	1919. T.
Pig iron	294,480	294,100
Manufactured iron and steel .	243,000	241,190

ITALY.

The new Italian Tariff which was very suddenly put into effect by Government on 1st July 1921, revised all items and greatly increased the number of dutiable products.

It is evident that the new Tariff was created with the purpose of protecting domestic manufactures and this is the real reason for the complicated system of the co-efficients; it was designed to come to the help of domestic industry which was badly shaken by the world crisis *and not in a position to fight foreign competition.* (*Iron Age*, New York, 6th October 1921.)

The Italian Government placed on pig iron an import duty of gold lire 12·50 from 1st July 1921, showing an increase of gold lire 25 per metric ton and on machinery of all kinds an import tax varying from gold lire 16 to 100.

Duties on main items of American iron and steel imported into Italy:—

	Duty in gold lire per 100 kilos.	Co-efficient.	Total duty gold lire per 100 kilos.
Pig iron	1·25	2·5	4·375=43·75 per ton
Pig iron more than 1·5 to 2·5 Mn .	1·75	2·5	6·125=61·25 " "
Ingot steel	3·00	0·8	5·40 =54·00 " "
Blooms & steel bars	7·00	0·5	10·50=105·00 " "
Steel rails	7·00	1·0	14·00=140·00 " "
Steel bars, plates, tubes, according to thickness or degree of manufacture .	..	..	12-30=120-300 " "

(*Iron Age*, New York, 6th October 1921.)

Duty on Plain and Galvanized Sheets.

Plain sheets exceeding 1½ mm. in thickness 19 lire per 100 kilos=190 lire per ton.

Plain sheets 1½ mm. or less in thickness 21 lire per 100 kilos=210 lire per ton.

Galvanized sheets 1½ mm. in thickness 23 lire per 100 kilos=230 lire per ton.

Galvanized sheets 1½ mm. or less 25 lire per 100 kilos=250 lire per ton. (*Ironmonger*, London, 2nd July 1921.)

State Aid.

The Italian Government reinstated the provisions of the decree of February 1916 *authorising the admission free from Customs and consumption taxes on machinery and materials of construction for establishing new manufactures or for use in new industrial enterprises installed in old establishments.* The exemption granted by the above decree was for a period of five years and lapsed in March 1921. *It also includes exception of the profits in such factories from income tax and buildings from taxes and surtaxes.* (*Iron and Coal Trades Review*, London, 31st March 1922.)

Production.

	1900. T. Metric.	1919. T. Metric.
Pig Iron	24,000	239,710
Steel (Ingots)	115,800	731,800

सत्यमेव जयते

10. In the past the gain has been far greater. During the war we supplied to Government 290,000 tons of steel at an average base price of Rs. 150. The only other source from which the Indian Government could have obtained supplies was the United States of America, and considering the exorbitant freight rates then prevailing, the material would have cost at least Rs. 200 a ton more. As a matter of fact, Government paid as much as Rs. 1,000 a ton and more for some steel during the war. In addition to the annual economic gain which we have estimated above at about two crores, there is here a definite money saving of six crores of rupees. But the strategic advantage of basing the campaigns in Mesopotamia and East Africa on steel supplied by India far outweighed any money saving, and could not be estimated in terms of money at all.

11. In the two years subsequent to the war further large sums were saved to India by our supplies of rails to the Government and to the Railways. In the statement attached, this has been shown to be at least one and a half crores in the years 1920-21-22. On these figures a moderate estimate of the economic gain to India resulting from the establishment of this industry for the past nine years will total fourteen crores in employment, wages, taxes, freight, etc., and seven and a half crores in actual money saved, or over twenty crores altogether.

12. So much for the past which we are afraid has been forgotten now that the urgent needs of war are over. For the future the annual figures will be much larger. Our output will be increased three times, and the total economic gain to the country will, therefore, be at least three crores annually in employment, wages, taxes, freight, etc. The capital invested in the industry in our Company will be about thirty crores, and may reasonably be expected to yield at least ten per cent., if the industry survives, or another three crores annually. If Government and the country allow the industry to be destroyed, this capital will be entirely lost, and will become unproductive, and the total loss to India would, therefore, be at least six crores annually.

13. On the other side, Government has to consider the effect of a protective duty. The present duty is 10 per cent., and this has been imposed for revenue purposes. We have repeatedly stated that in our opinion a duty of at least 33⅓ per cent. is necessary to ensure adequate protection. The annual consumption of steel in India may be taken roughly at one million tons yearly. When our Works are completed we shall be making 400,000 tons, or about half that quantity. The average base price of imported steel may be taken to-day at Rs. 120 per ton. It is not likely, in our opinion. to fall permanently below that figure, and that is approximately the price at which it is to-day coming into this country. Twenty-three and a third per cent. which is the additional protection for which we have asked on this price is Rs. 28 a ton. On a million tons, therefore, the additional economic burden on India will be two crores and eighty lacs of which this Company will obtain less than half, as compared with the economic gain of six crores annually we have shown above. We are confident that it is only necessary for us to state the problem in these terms in order to convince Government that no sound statesmanship would surrender an asset of such economic value, of such capital military importance, and which actually brings more to the country than an adequate protective duty would lose in order to placate the shibboleth of free trade.

14. But there is also another aspect. It is our firm belief that the difficulties under which the industry at present labours are only temporary. Already we can produce pig iron from our raw materials at prices which enable us to export freely in competition with America and England, and we are at present exporting over 9,000 tons monthly which may be valued at over six lakhs. In steel our difficulties are peculiar, and are chiefly caused by actual physical difficulties with the furnaces and by the high cost of imported labour. Both these difficulties can be remedied and are now being remedied. We have established a Technical College of a very high standard

BRAZIL.

Government Aid.

The Brazilian Electric Metallurgical Co. has undertaken to erect in the Republic an electric steel plant, and in return the Government has granted to the Co. *freedom of Customs duty for 30 years* on the importation of machinery, motors, furnaces and materials required for the plant as well as the use of water-power belonging to the Federal Government. (*Ironmonger*, London, 14th May 1921.)

JAPAN.

Protecting the Iron Industry.—The Committee appointed by the Japanese Government to make suggestions for the encouragement of the native iron industry reports that *it is necessary to develop that industry in the interests of national defence.* It suggests that all iron works in the country should generally be amalgamated into a syndicate, that an import duty of 10 per cent. should be levied on pig iron, of about 15 per cent. on steel ingots and materials but that steel materials for ship building should be admitted free. When Commercial treaties make it impossible at present to apply increased duties, a bounty equivalent to the difference between the revised tariff and conventional rate should be granted to the producers and on steel material produced in Japan and used locally for ship building a bounty equivalent to the import duty should be granted either to the users or producers of the material. It is further suggested that wherever possible, Japanese materials should be used in engineering works undertaken by the State; that in carriage of iron and steel by sea and land preferential rates should be given to home-made goods; that the electrical manufacturers of iron should be encouraged; and that Japanese iron and steel manufacturers should be given financial accommodation when necessary. Means should be taken to train experts and workmen. Iron enterprises in Manchuria and elsewhere, in which Japanese concerns are concerned, should be protected in a manner similar to those in Japan proper. (*Ironmonger*, London, 22nd January 1921.)

Further it is proposed to exempt the Japanese iron and steel makers from business taxes and income-tax for ten years. (*Ironmonger*, 7th May 1921.)

In view of the above recommendations by the Committee, Japanese Government revised the tariff in order to help Japanese industry.

	Tariff for 100 kin before 11th June 1921.	Tariff from 11th June 1921.
Pig Iron General	0·10 yen=1·7 yen per ton.	1·7 yen per ton
„ „ Conventional . . .	0·083 yen=1·4 „ „ „	1·4 „ „ „
Ferro Manganese	1·25 yen=173·67 „ „ „	10% ad valorem
Ingots and Blooms, Billets and Slabs	0·50 yen=8·47 „ „ „	12% „ „
Bars, Rods, Tees, Angles, etc. .	0·60 yen=10·2 „ „ „	15% „ „
Wire Rods in Coils . . .	0·90 yen=15·24 „ „ „	15% „ „
Checkered Plates and Sheets . .	0·70 yen=11·86 „ „ „	15% „ „
Corrugated Sheets . . .	1·35 yen=22·87 „ „ „	15% „ „
Ordinary Tinplates and Sheets .	2·00 yen=33·88 „ „ „	15% „ „
Rails	8·80 yen=13·55 „ „ „	15% „ „
Portable Rails	1·80 yen=30·49 „ „ „	20% „ „
Iron Dogspikes	1·45 yen=24·57 „ „ „	37·36 yen per ton
Turntables and Plates . . .	2·55 yen=43·19 „ „ „	59·29 „ „ „
Fishplates, Tie Bars and Sleepers .	1·10 yen=18·68 „ „ „	15% ad valorem
Materials for Bridge . . .	1·90 yen=32·18 „ „ „	47·43 yen per ton

Steel Bounties.—While the Japanese shipbuilding bounty law of 1896 was suspended in 1918, the work which it was designed to accomplish is being carried forward by law dated August 1917 for the encouragement of the steel industry. This exempts from income taxes and business taxes all those engaged in steel industries and provides bounties for various domestic steel products. This resulted by 1921, in providing a domestic production of steel equal in volume to the amount of the imports.

Since 20th July 1921, the law encouraging the steel industry has been amended so that the bounties apply only to the steel products used in building, repairing naval vessels or merchants ships.

A bounty is provided for steel ingots and slabs made in Japan equal to 12 per cent. of the value of the imported steel ingots and slabs and a further bounty of 15 per cent. of the value of the imported article in case of bars, rods, shapes, tees, angles, ship-plates, sheet, tubes, pipes, and turbine blades made in Japan. These bounties are paid only when the articles are used in the shipyards. (*Iron Age*, New York, 28th September 1922.)

Production.

	Tons.
1914 Iron and Steel	89,890
1915 Iron and Steel	82,979
1916 Iron and Steel	378,118
1917 Pig	489,252
1918 Pig	694,880

Output of Pig Iron by Japanese controlled works would reach to 2,000,000.

CHINA.

Customs duties, etc., on iron and steel materials levied by the Chinese Government.

There is at present a 5 per cent. *ad valorem* duty on:—

(1) Bolts, Nuts and Washers.
(2) Crossings for Railways.
(3) Fishplates and Spikes.
(4) Pipes, Tubes, and Fittings (both plain and galvanized).

Specific duties are levied on the majority of iron and steel items. Government purchases are liable to the same duty as all others and native industries likewise pay regular tariff charges. (*Iron and Coal Trades Review*, London, 29th September 1922.)

Assisting Chinese Iron Works.—The Chinese Government has notified the Provincial Government that the Tayeh Iron Works has been exempted from export tax on iron and steel and also for a period of five years from provincial likin and other duties. (*Iron and Coal Trades Review*, London, 1st July 1921.)

(4) That where an important industry needs immediate assistance Government should consider the claims of the industry and, if satisfied, should recommend to the Legislature the grant of the necessary help pending fuller investigation by the Tariff Board. (Page 70, para. 121.)

(5) That power should be taken to impose a dumping duty when, after enquiry by the Tariff Board, it has been established that dumping is taking place and that it is injuring or is likely to injure an Indian industry. (Page 79, para. 139.)

(6) That similar power should be taken to prevent unfair competition from a country with a depreciated exchange. (Page 81, para. 140.)

(7) That in the interest of Indian industries duty should be charged on goods belonging to the Government. (Page 154, para. 285.)

3. We presume that Government will have no difficulty in agreeing with the propositions stated so emphatically and unanimously, by the Commission, *viz.*, that the steel industry is essential for purposes of national defence and that there are no natural obstacles to its development in India. They cannot so soon have forgotten the experience of the late war. Without this steel works the campaigns in Mesopotamia, in Palestine and in East Africa could not have been fought successfully, and the Government of India have themselves declared this by the mouth of Lord Chelmsford, then Viceroy and Governor-General, when he visited the Works at Jamshedpur in 1919. Lord Chelmsford then said:—

> "I have come down here to-day in the first place to see this fine example of Indian industry. As you know, it is the policy of my Government to encourage all industries in India so far as is possible to do so. And I wanted to be able to see this fine example of Indian industry which has been set up at Sakchi. In the second place, I wanted to come here to express my appreciation of the great work which has been done by the Tata Company, during the past four years of this war. I can hardly imagine what we should have done during these four years if the Tata Company, had not been able to give us steel rails which have been provided for us not only for Mesopotamia, but for Egypt, Palestine and East Africa."

4. As to the second proposition, we may point to one fact which is, in our opinion, conclusive. Several of the large English Commercial firms in this country have already laid before Government in some cases in association with large steel manufacturers in England, proposals for the establishment of Steel Works in this country, and have obtained concessions of the necessary raw materials and of railway facilities for that express purpose. Presumably, therefore both they and Government were already satisfied before the issue of this report that there are no natural obstacles to the development of the industry in this country. In this letter we desire to deal with the question on general principles only, and we need not labour the point further. We are confident that within fifteen or twenty years the Indian manufacturer will not only be able to compete with any country in the world, but will be exporting large quantities of the material. The necessary raw materials exist in India in enormous quantities, and are one of the country's greatest natural assets. Such difficulties as exist can be conquered and will be conquered within a short time.

5. It remains for us to prove that the industry is in danger from foreign competition. We asserted this strongly last year and we gave our reasons in the letter referred to. But the position is now still more dangerous in spite of the increase in the duty imposed last year as a revenue measure. In the last few months the prices of imported steel in this country have reached a level with which we cannot compete. We know that these prices are lower than the prices at which similar material is sold in the country of origin and in many cases lower than the actual cost of manufacture. Imported steel is freely quoted in India at present at approximately Rs. 135 for Continental steel and Rs. 155 for British Standard per ton. We cannot manufacture at that cost, and our base cost at present is Rs. 175. We

B. BELGIUM.

(Figures from "Metal Bulletin.")

	Beams.		Bars.	
	Home price at Works Fcs. per ton.	Export price f. o. b. Fcs. per ton.	Home price at Works Fcs. per ton.	Export price f. o. b. Fcs. per ton.
1922.				
January	410	410	430	405/410
February	400/425	400	440	425
April	380/390	373	420	410
May	400	375	410	400
June	400	375	420	400
July	410	385/300	420	400/410
September	500	400	430	425
October	400	380	430	425
November . . .	425	390	450	450
December	400/425	385/390	460/470	450/460
1923.				
January	420	390	470/475	450/455
February	500/550	No quotation for Export.	550/600	..
March	775	Do.	800	..

सत्यमेव जयते

Enclosure (*g*) :—

A.—OPEN HEARTH STEEL INGOT COSTS WITH "ALL IN."

	April 1922 to March 1923 (O. H.)	April 1922 to March 1923 (Duplex.)	1922-23 Cost excluding 3 months of strike (O. H.)	1922-23 Cost excluding 3 months of strike (Duplex).
	Rs.	Rs.	Rs.	Rs.
*Net Metal Cost (Pig and Scrap).	45·21	60·44	44·08	57·03
Feeding Materials . .	3·13	2·34	2·99	2·31
Labour . . .	5·21	6·68	5·99	6·68
Stores	2·31	6·39	2·29	6·39
Refractories . . .	2·41	5·37	2·35	5·37
Ingot Mould Stools . .	1·03	1·00	1·03	1·00
Relining Fund . . .	7·50	7·50	7·50	7·50
Gas Producer . .	7·68	12·82	7·48	13·31
Service Expense . . .	7·56	9·76	6·18	9·27
Interest	6·72	3·28	5·77	4·45
Depreciation . . .	10·81	5·76	8·51	6·68
Bombay Office expenses and Agents' Commission.	1·50	0·85	1·29	0·99
TOTAL .	101·07	122·19	95·46	120·98
AVERAGE COST .	Rs. 101·48			Rs. 96·01

सत्यमेव जयते

---

* This is our actual cost. If we were to buy pig iron instead of actually making it, this figure would probably be Rs. 60. We are therefore sacrificing that amount of profit to the manufacture of steel.

B.—BLOOMING MILL COST WITH "ALL IN."

	April 1922 to March 1923.	1922-23 excluding three months of strike period.
	Rs. per ton.	Rs. per ton.
Net Metal Cost (Ingot)	112·49	106·29
Labour	1·79	1·73
Stores and Tools Supplies	1·41	1·33
Steam	2·80	2·69
Gas Producer	1·56	1·53
Roll Account	0·25	0·25
Service Expense	1·45	1·35
Interest	1·91	1·63
Depreciation	2·87	2·44
Bombay Office Expense and Agents' Commission	0·42	0·36
TOTAL	126·95	119·60

सत्यमेव जयते

C.—RAIL MILL COST WITH "ALL IN."

	April 1922 to March 1923.	1922-23 Cost excluding three months of strike period.
	Rs. per ton.	Rs. per ton.
Net Metal Cost (Blooms)	146·81	138·16
Labour	7·98	7·70
Stores and Tools Supplies	2·88	2·82
Steam Cost	4·58	4·43
Gas Producer	1·50	1·46
Rolls	2·22	2·08
Service Expense	4·91	4·64
Interest	5·85	5·04
Depreciation	8·75	7·56
Bombay Office Expenses and Agents' Commission	1·31	1·13
TOTAL	186·79	175·08

D.—BAR MILL COST WITH "ALL IN."

	April 1922 to March 1923	1922-23 Cost excluding three months of strike period.
	Rs. per ton.	Rs. per ton.
Net Metal Cost (Billets)	145·74	137·01
Labour	12·42	12·36
Stores and Tools Supplies	4·92	4·89
Steam	4·85	4·75
Gas Producer	4·56	4·54
Rolls	3·23	3·23
Service Expense	6·72	6·59
Interest	8·76	7·86
Depreciation	13·15	11·79
Bombay Office Expenses and Agents' Commission	1·95	1·76
TOTAL	206·30	194·78

Enclosure (*h*):—

Extracts from confidential and published reports showing the dumping of Steel in India:—

सत्यमेव जयते

Published Reports.

"**Steel Orders Taken at Loss.** Edward M. Adams, first Vice-President and General Sales Manager, Inland Steel Company, Chicago, said that he had taken many thousands of tons during the past two years, knowing at the time that he took the orders, *that the Company was incurring a loss of from $5 to $8 a ton.* He declared that labour and transportation are the two big elements in steel production costs and that if one added increases in freight and labour to the 1913 prices, it would be found that steel should be selling even higher than at present. Labour is now 114 per cent. higher than in 1913, when the common labour rate was 17 cents an hour. Freight rates have risen 91 per cent. above the 1913 level. Nevertheless, Mr. Adams is of the opinion that prices have reached the peak and that from now on and probably for years to come, industries will have to be satisfied with a smaller return, whereas labour will possibly get a larger proportionate compensation than in the past." (*Iron Age*, New York, 24th May 1923.)

"At the moment the tendency of the market is undoubtedly in favour of buyers, but on the other hand manufacturers have experienced little relief in the matter of production costs for some little time, and the intention has been expressed in more than one direction to close down Works rather than to accept orders at prices which, it is maintained, are below cost. There is no doubt however that British manufacturers are to a certain extent meeting the position and giving concessions for attractive business and also, are watching very closely developments on the Continent." (*Ironmonger*, London, 16th June 1923.)

"Makers sacrificed all profits, sold in fact in many cases at a loss in order to get orders, yet in spite of all that they could do they have neither been able to keep their plant working continuously nor to stimulate demand by selling at a loss.

"Prices are low—unprofitably low, having regard to costs of production—but at last long orders are beginning to flow, and ere long it is hoped that the stream of trade will be in full spate once more.

"At the beginning of the year the system in vogue was that in the manufactured iron and steel trade there was an official list of minimum prices issued by the Manufacturers' Association which governed the home market, but makers were left free to sell at any figure they chose for export.

"The home prices then ruling were as follows:—

Medium steel billets, £9; hard ditto, £9-10*s.*; soft ditto £7-10*s.*; common iron bars, £12-10*s.*; steel boiler plates, £14-10*s.*; steel ship, bridge, and tank plates, £1-10*s.*; steel angles, £10; steel joists, £10-10*s.*; sections, £11; heavy steel rails, £9-10*s.*; fishplates, £14-10*s.*; iron and ship rivets, £16; galvanized corrugated sheets (24 in. gauge), £16.

"These prices were commonly supposed to leave no margin of profit; yet so desperate was the situation, so eager were the British makers to avoid laying their plant entirely idle that export orders were taken at 20*s.* to 40*s.* per ton below the above rates. They simply had to do so to get work, for in competition with the Continental producers they were unfairly handicapped." (*Special Review of Iron and Steel Trade in 1922. North Eastern Daily Gazette, Middlesborough.*)

"During the past week two Chairmen of big Companies have made pessimistic speeches.

Lord Aberconway, at the annual meeting of John Brown & Co., said that very little money is to be looked for in steel production at the present day. Mr. Charles Markham, Chairman of the Park Gate Iron and Steel Company, expressed the opinion that there is not a Steel Works in Great Britain that is making both ends meet. The serious position in which the trade is placed at present was illustrated by some figures given by Mr. Markham. The Directors in their report had stated that the works were fairly well employed and the output satisfactory, but to obtain orders sales had to be made below costs. Mr. Markham supplemented this by stating that the output reached the "record" figure of 159,000 tons of ingots, but the price obtained for them was only £1,141,000, whereas in 1921, with a make of 150,000 tons, the sales amounted to £2,650,000." (*Weekly News Service*, No. 28 dated London 12th July 1923).

CONFIDENTIAL REPORTS.

London, 8th February 1922.

"The trend of British Steel prices can also be gauged by the fact that during last week, Belgian consumers purchased steel sheets and Pig Iron in the United Kingdom in somewhat substantial quantities. In a year's time I fear some of the Steel Works Balance Sheets will make a sorry showing, because it is *certain that many of them are selling below actual cost price.*"

23rd February 1922.

" On my recent visit to Germany, I of course made full enquiries as to the outlook there. The costs of living and expenses generally, are going up all the time. This is certain, Railway rates, postage, telegrams, rates and taxes, and every item incidental to ordinary routine of business, and domestic life, are all the time increasing. As a result the prices of steel are very substantially higher than a month ago. The probability is, that the tendency must continue, so that we may anticipate that very soon the Germans will be out of the export market. If the French and Belgian francs continue to appreciate in value, as has been the case during the last few days, the prices from those countries will also advance on a sterling basis and unless the Americans go out for a campaign of price cutting (which they seem to have now started on) we might see a fairly general advance in prices here. Our Works will certainly put up prices the very moment they can safely do so, seeing that many of them *are working at, or below cost price at present.*

There have been no price movements here during the last week or two, worth mentioning, *and the very big difference in quotations for Home trade and export, still remain in force, in some instances, on manufactured steel the difference is as much as £2-10-0 per ton.*"

24th August 1922.

" If the demand for Steel continues on the same modest lines as has been the case all this year, *we may see lower prices, even perhaps below cost,* in the scramble to get any orders which are offering from time to time."

27th September 1922.

" The part that I have marked in the enclosed newspaper 'cutting' is significant, and it is correct. I have recently mentioned to you more than once that the Steel Works in this country *have been for some little time past selling at or below cost, and this is quite certain beyond any question.* How long the process can last is an unknown quantity. I think some of the Works who have been desperate and taken all sorts of unremunerative figures for the sentimental satisfaction of keeping their Works going, will probably not be able to do it after the end of this year.

I do not believe there can be a single Steel Works in Great Britain that is able on a legitimate basis to produce rolled steel whether it be bars, sectional steel or rails, at less than £8 per ton, which I regard as actually below the cost, believing that the best organised Works will have costs nearer to £8-10-0. You will no doubt be interested to know in this connection that recently the South African Government placed an order for 3,000 tons of 45 lbs. per yard Rails, and the figure they paid was £7-12-3 per ton f.o.b. Liverpool. Now those Rails came from Workington from a mill belonging to the United Steel Works, Ltd., and you can take it that the cost of delivering from the Works to f.o.b. Liverpool would not be less than 12/3*d.*, thus leaving a nett figure at the Works *of £7 per ton, which beyond any question whatever is well below the actual cost, but on the other hand the same Works have been recently engaged in rolling several thousand tons of heavy Rails for an English Railway, and I have every reason to say that they got £9 per ton for this particular lot for the home trade, so taking the two lots together (the contracts were both fixed up at about the same time) the suppliers probably came out with an average price at the Works of £8-5-0, on which they no doubt felt justified in starting up their mill again, as they had previously been idle for several months.*"

30th November 1922.

" I am enclosing you herewith a newspaper report of the Annual Shareholders Meeting of the Cargo Fleet Works, as well as the South Durham

Steel Co. You will see some very interesting figures are publicly given by the Chairman of these Companies, setting forth what the cost of coal and other charges have been per ton of steel, and giving some comparisons as regards selling prices, the burden of taxation, etc. It is possible you may find a considerable interest in making a comparison between some of these figures and your own. Generally speaking, these facts as stated by the Chairman of the Companies, at once support what *I wrote you some weeks back that the Steel Works here as a whole have been selling their material at or below cost.*"

सत्यमेव जयते

The Protection of Young Industries.

I.

The proposal that temporary protection should be afforded in India to the Steel Industry as a young and struggling industry is in no way repugnant to the doctrine of free trade.

Self-determination is to-day an accepted principle of nationality. Every people is held to be acting rightly in desiring to govern itself even though such a Government may in the beginning be less efficient and less economical. But the desire to promote and foster industries of national importance may be just as much an effect of the national spirit as the desire for self-government and the cry of "Home Steel" for a country as reasonable and as right as the cry of "Home Rule" provided that the industry is economically sound. Even the staunchest adherents of Free Trade have admitted this. The argument cannot be stated better than it has been stated by John Stuart Mill himself in his Principles of Political Economy.

"The only case in which, on mere principles of political economy, protecting duties can be defensible, is when they are imposed temporarily (especially in a young and rising nation) in hopes of naturalizing a foreign industry, in itself perfectly suitable to the circumstances of the country. The superiority of one country over another in a branch of production often arises only from having begun it sooner. There may be no inherent advantage on one part, or disadvantage on the other, but only a present superiority of acquired skill and experience. A country which has this skill and experience yet to acquire, may in other respects be better adapted to the production than those which were earlier in the field; and besides, it is a just remark of Mr. Rae, that nothing has a greater tendency to promote improvements in any branch of production than its trial under a new set of conditions. But it cannot be expected that individuals should, at their own risk, or rather to their certain loss, introduce a new manufacture, and bear the burden of carrying it on, until the producers have been educated up to the level of those with whom the processes are traditional. A protecting duty, continued for a reasonable time, will sometimes be the least inconvenient mode in which the nation can tax itself for the support of such an experiment. But the protection should be confined to cases in which there is good ground of assurance that the industry which it fosters will after a time be able to dispense with it; nor should the domestic producers ever be allowed to expect that it will be continued to them beyond the time necessary for a fair trial of what they are capable of accomplishing."

II.

The same doctrine has been very carefully examined by Professor Taussig with special reference to the growth of the steel industry under protection in America. His conclusions are given in his book "Some aspects of the Tariff Question" published in 1918, and as Professor of Economics at Harvard University his opinions are entitled to great weight.

"The form in which the argument most commonly appears in connection with our recent industrial development is the statement that protection ultimately lowers prices. It is admitted (grudgingly perhaps—and sometimes questioned or even denied) that the first effect of the imposition of a duty is to raise the price of the dutiable article. But domestic competition ensues, it is said, and eventually price goes down. And when it is asked why the domestic producer, if he can bring his commodity to market after all at the lowered price, really needs a protecting duty, the answer is that he needs it *at first*, during the early stages. He needs to learn; he needs time to develop the full possibilities. All this, it is obvious, is simply the young industries argument."

* * * * * * * *

"A different question, and one not so simple, is whether there is any prospect of gain from protecting young industries in a country as fully developed as the United States has been since 1860; whether, for so robust and full grown a social body as this has become, ridicule is not a sufficient answer, whatever the terms in which the argument is stated. In that earlier formulation of the argument which won a respectful hearing from the fair-minded, stress was laid on the general conditions of the country imposing protective duties. It was a young country that was spoken of by Mill, rather than one having young industries. List's well-known plea rested on his doctrine of stages in economic evolution—on the inevitableness of the transition from the agricultural and extractive stage to the manufacturing stage, and on the advantages of protective duties for furthering and easing this transition. He found the United States in this stage of development when he was sojourning here during the period of our early protective movement. On his return to Germany, he found his own country in a similar stage, and agitated for nurturing protection there also. The possibility of good results from protective duties under such conditions is now denied by few. But does the same possibility exist when this particular period of transition is past, when the manufacturing stage has been fairly entered, when the question no longer is whether manufacturing industries shall be established at all, but whether some particular kinds of manufactures shall be added to others already flourishing?

"Notwithstanding early prepossessions to the contrary, I am disposed to admit that there is scope for protection to young industries even in such a later stage of development. Any period of transition and of great industrial change may present the opportunity. No doubt the obstacles to new ventures were greater during the first half of the nineteenth century than they have come to be in the modern period. The general diffusion of technical knowledge and technical training, the lessening of secrecy in trade processes which is the inevitable result of large-scale operations, the cessation of regulations like the early British prohibition of the export of machinery, the greater plenty of expert mechanics and machinists—all these factors tend to facilitate the establishment of industries whose difficulties are no more than temporary and transitional. None the less the early stage of any new industry remains difficult. In every direction economists have come to recognise the immense force of custom and routine, even in the countries where mobility and enterprise are at the highest. Departure from the habitual paths of industry brings unexpected problems and difficulties, false starts and initial losses, often a fruitless imitation of familiar processes before new and better ones are devised. All this is made more trying when a young competitor is striving to enter the market against a producer who is established and well equipped. The obstacles in the way of promising industries though doubtless not so great as they were a century ago, remain great. The experiences of the United States during the last fifty years, some of which will be described in the following pages, indicate that there remains in modern times at least the possibility of acquiring a self-sustaining industry by aid during the early stages."

* * * * * * * *

"Further, the length of time to be allowed for the experiment should not be too brief. Ten years are not enough; twenty years may be reasonably extended; thirty years are not necessarily unreasonable. When writing of the earlier stages of United States tariff history, I intimated that the first sharp break, in 1810—20, from the established ways of industry, and the very first ventures in new paths, were sufficient to give the needed impetus, and that thereafter protection might have been withdrawn. An opinion of this sort I should not now support. What has already been said of the tenacity of old habits and the difficulties of new enterprises justifies the contention that a generation, more or less, may elapse before it is clear whether success has been really attained."

III.

The arguments in favour of initial protection put forward by Professor Taussig apply with even greater force to the present condition of India, and the arguments against it in the same passage have no application. This country is in the same inevitable stage of transition from the agricultural and extractive stage to the manufacturing stage that List found in America and requires the same nurturing protection that he advocated in Germany to ease this transition. The steel industry here is really an "infant industry." If the war years during which artificial protection was afforded to the steel industry in India and which actually did great harm to the plant then installed in the country owing to the constant strain placed on both men and machinery are excluded, the industry in this country may fairly be said to have just entered on the manufacturing stage, and even the search and development of the necessary raw materials has not yet been completed. Nor, a very important point, have the railways as yet afforded that intensive and economical development of transportation which has been so marked a factor in the development of the great steel industry of America. For the manufacture of steel, India still has to import skilled labour. It still has to compete with that immense force of custom and routine, of which Professor Taussig speaks, and which is well known to be the greatest problem of Indian manufacture. If the reasoned conclusion of an enquirer such as has been quoted is that the giant American industry required protection even after its firm establishment before 1900, how much greater is the force of such an argument when applied to the present condition of the Industry in India? And how great a benefit may we expect to the country from its application?

IV.

The principle is not new. It is admitted by all civilised Governments in the application of the patent laws which are intended to provide that an initial privilege to the producer of a new thing or of an old thing in a new manner and a consequent burden on the consumer will be balanced by ultimate gain. One thing is certain and that is that in Germany and America the two greatest examples of the application of protection to this industry as a growing industry there has been an extraordinary advance in all the technique and organization of manufacture since the adoption of projection with a consequent reduction in price. India which possesses the same natural advantages should be given the same opportunities. The burden on the consumer, if the import duty of 33⅓ per cent. which has been suggested is adopted, can hardly be weighed in the scale against the certain ultimate advantage.

V

But it does not by any means follow that the whole tax will fall upon the actual consumer. As Professor Taussig points out in his review of the effect of protection on steel rails in America, it would be hazardous to reckon how far the tariff system in keeping up the price of rails brought a burden on the general public, how far it simply lessened the profits or increased the losses of railway promoters and investors. The same considerations will apply to many Indian industries. Also the relation between the cost of constructing railways and the rates charged for railway service is a loose and uncertain one and steel rails were a cardinal factor during precisely these years in enabling railway traffic to be conducted more effectively and charges to be lowered. Also had rails not been produced within the country, the increased demand would have led to a great increase in the price of imported rails which would probably not have been less and might have been considerably higher than the duty imposed. A similar condition existed in India after the War. Had the country not been able to make steel rails within its own territories, exorbitant prices would have been extracted for it during the years 1918–20 and either must have been paid or the essential minimum necessary to keep its transportation system alive must have been abandoned. Although we cannot hope to see in the immediate future any such development of railway communications in India as occurred in America during the last quarter of last century, these considerations must be given full weight.

VI.

Growth of the Iron and Steel Industry in America.

No economic development of the last century is so striking as the rise of the American steel industry. Whatever the ultimate cause this rise has occurred simultaneously with the enforcement of a protective tariff so rigorous as to be for many years practically prohibitive. If the free trader argues, as he commonly argues, that this has not followed as a result of the protective duty, but in spite of it he cannot at any rate deny the fact, and the obvious inference is that whatever else a protective tariff may have done, it has at any rate not damaged the industry or the industries dependent upon it for supplies of raw materials, a point of which much has been made in this country and on which many gloomy prophecies have been delivered. Such prophecies commonly proceed as do the majority of the arguments on any fiscal question from a lively appreciation of the prophet's own interests. Commonly also they entirely ignore the actual facts of the world's economic history and are based on purely deductive and inaccurate reasoning, a method which has now been largely discredited with economists in favour of the more accurate system of testing economic hypotheses by actual results as in other branches of science. It cannot be proved with certainty that the rise of the American Steel industry has been due to the tariff. No economic fact can be proved with certainty, but it can be shown that there is a very strong probability that protection during the initial stages was one of the principal if not the principal contributing cause to that extraordinary phenomenon of economic history.

VII.

The facts are plain enough. In 1870 Great Britain was by far the largest producer of pig iron. It may be explained here that most of the pig iron produced in the world is eventually converted into steel. America and Germany followed a long way behind and yet America had been manufacturing for nearly half a century. The point is important because is shows that the industry in America had by that time long passed the 'Young Industry' stage to which the Indian industry has hardly yet even attained. The actual figures in thousands of tons of production were these:—

	Great Britain.	United States.	Germany.
1870	5,963	1,665	1,391

The subsequent comparative development in these three countries of which the first enjoyed a long start in the traditional processes of manufacture and the advantages of free trade and the others endeavoured to counter these advantages by the imposition of a tariff is instructive.

	Great Britain.	United States.	Germany.
1880	7,749	3,835	2,729
1890	7,904	9,203	4,658
1900	8,960	13,789	8,348
1910	10,012	27,304	14,556

That is to say in the free trade country which started with the enormous initial advantage possessed by a country that has commenced an industry and made a success of it long before its competitors and which controls the world's market and the world's freights as Great Britain did in 1870, the increase in production was less than 100 per cent. In one of the countries in which the tariff was used to foster the industry, the increase in production was over 1,600 per cent. and in the other over 1,000 per cent. Figures such as these can hardly be explained away by deductive reasoning. "If, as the extreme protectionists contend, the growth of domestic industry is in itself proof of the success of their policy, a degree of success was attained in this case that could admit of no cavil." (Professor Taussig, *loc. cit.*)

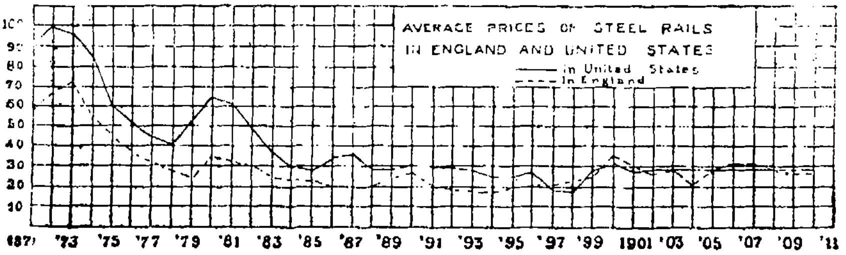
How far was this growth due to protection? On pig iron the actual duty imposed from 1870 to 1894 was seven dollars per ton: from 1894 to 1909 it was four dollars per ton. On steel rails the rate was twenty-eight dollars per ton from 1870 to 1883: seventeen dollars from 1883 to 1890: about thirteen and a half dollars from 1890 to 1894 and seven dollars and eighty-four cents from 1894 to 1909. Throughout the initial period from 1870 to 1897 the duties were levied by weight and were highly protective On rails the duty was about one hundred per cent. on the foreign price from 1870 to 1897 and between fifty and eighty per cent. from 1883 to 1894. No such prohibitive duty has been asked for in this country although our industry is in a very backward condition compared with that of the industry in the United States in 1870. At that time the production of the United States was more than one-quarter that of Great Britain. The production in India to-day is only about one-twentieth of the production of Great Britain.

VIII.

The increase in the production of steel rails in America which occurred during these years has been beyond all precedent. It has risen from no production at all in 1870 to one million tons annually in 1880 to nearly two million tons in 1890, and after that it has been regulated solely by the needs of the rails. It is true that there has during this period been enormous railway development, but the rails could have been obtained from foreign markets and at the start could have been obtained more cheaply from them. The United States preferred the development of their native industry to the policy of buying in the cheapest market with the results that have been shown.

IX.

That they were justified in adopting this policy is proved by the fall in domestic prices. The following chart shows this very clearly:—



For the first twenty-five years until about 1895 the gap between the prices of foreign rails and domestic prices is great, and so great a difference could not have persisted had it not been for high duty. For a long time the purchaser of all rails paid a tax because of the duty, and that difference in price represents the initial sacrifice made by the American nation in return for the ultimate advantage which they have gained. From the year 1896 the domestic price fell to the level of the British price, for a time it even fell below it, and at no time since has it been substantially above this price until the recent depreciation of exchanges upset the prices of the whole world. For many years the American price remained perfectly steady. Here again the protectionist will point with pride, and this time with pride more clearly justified. The object of protection to young industries—the ultimate fall in price to the foreign level—seems to have been obtained. The course of events which thus is sharply defined for rails is typical of what has happened with all the cruder forms of iron and steel: extraordinary increase of domestic production: domestic prices at first higher than the foreign: continuance of imports for a while then their cessation; reduction of the domestic price; finally equality of price for the foreign and American products. To repeat the outcome seems to have been precisely that predicted by the advocates of protection to Young Industries. True the term 'Young Industries' is rarely applied to such a giant as the American Iron industry. But as has been pointed out, the contention that protection operates in the end to lower prices is simply the young industries argument in a different turn of phrase. Substantially it is this argument which has been advanced and which seems to be verified by the actual course of events. The protectionist may point with pride to the final outcome. In the end his object was attained; the industry became self-sufficing need no further props, eventually supplied its product as cheaply as could be done by the now fairly beaten foreigner. No one can say with certainty what would have been and the bias of the individual observer will have an effect on his estimate of probabilities. The free trader impatient with the fallacies and superficialities of current protectionist talk will be slow to admit that there are any kernels of truth under all this chaff. What gain has come will seem to him a part of the ordinary course of progress. On the other hand, the firm protectionist will find in the history of the iron trade conclusive proof of brilliant success. And very possibly those economists who, being in principle neither protectionists nor free traders, seek to be guided only by the outcome in the ascertained facts of concrete industry, would render a verdict here not unfavourable to the policy of fostering "national industry."

X

That this judgment is fair will be admitted by all who prefer to argue from facts rather than from prejudice. The history of the economic development of the steel industry in Germany is practically the same. The present position of India is very similar to that existing in those great countries when they first started on their successful campaign for the development of this national industry. India has the same enormous reserves of iron ore, coal and suitable fluxes. It is in the same stage of transition from agriculture to manufacture. It is faced by the same competition from foreign producers and it has the same expectation of large railway and industrial development ultimately within its own country. Moreover, at its doors are the large and constantly growing markets of the far East where already Indian pig iron has opened a large and increasing export trade.

XI.

The Effect of Foreign Competition

The growth of the iron industry in Europe and the States of America, the long start obtained by them has placed those countries in a position that makes the development of this young industry in India almost impossible or at least very precarious without assistance from the country. As John Stuart Mill says, it cannot be expected that individuals should at their own risk or rather to their certain loss introduce a new manufacture and bear the burden of carrying it on until the producers have been educated up to the level of those with whom the processes are traditional. Yet this is precisely what has been done in India hitherto. It is extremely doubtful whether the producers in India can continue to bear this heavy burden in the present disturbed condition of the world with the depreciated exchanges, the dislocation and inefficiency of domestic traffic conditions, and the intensive dumping that have followed on the War.

XII.

The history of the American iron trade after 1870 has been to a very great extent the history of transportation. Compare the position in that country with this. In both the cheap carriage of the ore and coal is the indispensable condition of the smelting of the one by the other. In America, in the carriage of iron ore and coal the methods of railway transportation were developed to the utmost. Every possible use has been made of water transport and the transfer from rail to ship and from ship to rail on the great lakes, the carriage in the ship itself and the handling of the materials is effected at astonishingly low cost. At every stop direct manual labour has been excluded and the use of machinery enables the producer to move enormous quantities of raw materials as cheaply as possible. The railways have been raised to the maximum efficiency for the rapid and economical carriage of bulky freight; the plant has been made larger and stronger, the paying weight increased in proportion to the dead weight, the ton mile expense lessened by heavier rails, larger engines, longer trains and easier grades, the mechanism for loading, unloading, and transhipping perfected to the last possible degree. Compare with this the present condition of the Indian Railways, nineteen-twentieths of the capital in which belongs to the people of the country. Even now the raw materials required by the industry cannot all be carried by the railways; coal costs have increased out of all reason largely owing to the dislocation of traffic that followed on the War; and freights have actually been raised while other prices are falling. If a comparison is made with conditions in the older countries, the difficulties of the industry in competing with these are at once apparent. And another condition that applies peculiarly to this country are the giant combinations and trusts in the older countries. Owing to their size and organization these can always produce more cheaply than, apart from any question of dumping, a young industry growing up under the conditions that we have described in India. They will not be able to do so permanently. They will probably not be able to do so for very long, but undoubtedly they can do so at the start and until the steel industry in this country is firmly established.

XIII.

Dumping and Depreciated Exchanges.

The original doctrine of free trade presupposed a fair and normal exchange and distribution of the world's wealth. It certainly took no account of the abnormal conditions existing at present which largely result from the desire of all producing countries to recover and extend their markets after the dislocation caused by the War. In these abnormal conditions the depreciation of the foreign exchanges have played a very large part. But legislation intended deliberately to foster and preserve the industries of the producing countries threatened by total extinction as a consequence of the War has also contributed greatly. Bounties and freight concessions have been granted in some countries for export trade, in others, and in fact practically in all countries except England and India, customs barriers have been erected to prevent unfair competition from abroad, full use has been made by the exporting countries of the depreciation in their currencies, and even in England prices for export have ruled consistently for over a year considerably below the prices for domestic consumption. All this is very unlike the conditions for the exchange and distribution of production between the various countries of the world contemplated by the Free trader, and it is not at all impossible that the leading exponents of that doctrine confronted with conditions which had never occurred when they laid down its principles and which they could not have anticipated might have altered those principles to meet the altered conditions. The War has changed much for our generation, but there is hardly any sphere of human activity where the change has been so marked and so unprecedented as this. It is all very well to advise a country to buy in the cheapest markets, but in these abnormal conditions there is no saying which is the cheapest market or indeed that if it abandons its own industries it will eventually be able to obtain its needs from those countries which are now eager to supply it on any terms even though these may mean their own economic ruin within a very short space of time. It is the abnormal and temporary nature of this constantly recurring crisis through which the world is passing that justifies countries in endeavouring to prevent the unfair competition that has resulted from it. Even before the War such a doctrine was accepted by leading economists. The problems of dumping have been dealt with from a free trade point of view in Professor Taussig's Presidential address to the American Economic Association in 1904. In this he has laid particular stress on the principle that where dumping is temporary and will not continue indefinitely, the harm it does to the country that suffers from it will ordinarily be much greater than the advantage which that country will obtain by buying in the cheapest market.

XIV.

" 'Dumping,' he said on that occasion, 'I take to mean the disposal of goods in foreign countries at less than normal price.' It can take place, as a long-continued state of things, only where there is some diversion of industry from the usual conditions of competition. It may be the result of an export bounty, enabling goods to be sold in foreign countries at a lower price than at home. It may be the result of a monopoly or effective combination, which is trying to keep prices within a country above the competitive point. Such a combination may find that its whole output cannot be disposed of at these prices, and may sell the surplus in a free market at anything it will fetch—always provided it yields the minimum of what Professor Marshall happily calls 'prime cost.'

"Now, if this sort of thing goes on indefinitely, I confess that I am unable to see why it can be thought a source of loss to the dumped country; unless, indeed, we throw over all our accepted reasoning on international trade and take the crude protectionist view *in toto*. If one country chooses to present goods to another for less than cost; or lets its industrial organization get into such condition that a monopoly can levy tribute at home, and is then enabled or compelled by its own interests to present foreign consumers with goods for less than cost—why should the second country object? Is not the consequence precisely the same, so far as that other country is concerned, as if the cost of the goods had been lowered by improvements in production or transportation, or by any method whatever? Unless there is something harmful *per se* in cheap supply from foreign parts, why is this kind of cheap supply to be condemned?

"The answer to this question seems to me to depend on the qualification stated above—*if this sort of thing goes on indefinitely*. Suppose it goes on for a considerable time, and yet is sure to cease sooner or later. There would then be a displacement of industry in the dumped country, with its inevitable difficulties for labour and capital, yet later when the abnormal conditions ceased, a return of labour and capital to their former occupations, again with all the difficulties of transition. It is the temporary character of dumping that gives valid ground for trying to check it.

"A striking case of this sort has always seemed to me to be that of the European export bounties on sugar which for so long a period caused continental sugar to be dumped in Great Britain. These bounties were not established of set purpose. They grew unexpectedly, in the leading countries, out of a clumsy system of international taxation. They imposed heavy burdens on the exchequer, as well as on the domestic consumer, in the bounty-giving countries; and they were upheld by a senseless spirit of international jealousy. Repeated attempts to get rid of them by international conferences show that the cheap supply to the British Consumer, and the embarrassment of the West Indian planter and the British refiner, rested not on the solid basis of permanently improved production, but on the uncertain support of troublesome legislation. It might well be argued that these conditions would come to an end sooner or later. The longer the end was postponed, the worse was the present dislocation of industry and the more difficult the eventual return to a settled state of things. No doubt these were not the only considerations that in fact led Great Britain, the one great dumping ground, to serve notice that she would impose import duties equal to the bounties, unless these were stopped. Perhaps this decisive step would have been taken even if it had appeared that the bounties were to continue as a permanent factor in the sugar trade. But it is in their probably temporary character that the sober economist finds justification for the policy that led to their abolition. At all events there is tenable ground for arguing that Great Britain, in causing them to be stamped out, acted not only in the interests of the much abused consumers of sugar on the Continent, but in the permanent interests of her own industrial organization."

XV.

The principles stated in this extract apply very clearly to the conditions of the import trade in Iron and Steel into India during the past two years. The dumping due to depreciated exchanges which has led to such extraordinarily low prices of steel coming from Belgium and the continental markets cannot go on indefinitely. In Germany where the currency has fluctuated in the past 15 months from 350 marks to the £ to 25 million marks to the £, it is obvious that the producing and dumping country has reached a stage of economic disorganisation which cannot possibly continue wthout collapse. In Belgium, although the fluctuation has not approached this, there has still been a steady and continual depreciation of the currency and each fall has been followed by lower and yet lower prices for the Indian export trade. This has naturally re-acted upon English competition. The dumping which has been proved in the case of English steel by the continuance of lower prices for export than for home consumption is also the result of the same state of affairs and cannot continue indefinitely. This is conclusively proved by the fact that during the last two or three months on the cessation of the competition from the Continent owing to the disorganization caused by the occupation of the Ruhr Valley, this difference in price between import and export prices ceased altogether for two or three months and for that period the prices were the same. Continental competition, however, is now re-asserting itself as a result of the further depreciation of the German and Belgian currency and at once the English manufacturer has again commenced meeting such competition by selling for export at a price below the domestic price. As steel cannot be produced in England at the prices at which it is exported to this country (apart from other evidence this has been recently admitted by the Chairman of a large English Company in public), it is plain that this dumping also cannot continue indefinitely and is intended deliberately to meet the depreciation of the continental exchanges in foreign markets.

XVI.

Here, therefore, is exactly the case given in Professor Taussig's statement of the evils of dumping. It may be expected that unless it is checked, such dumping will continue until India is unable to carry on its normal industries. There will then be in this country the displacement of industry of which he speaks with its inevitable difficulties for capital and labour, and the effect will be so disastrous as to far outweigh any temporary advantage which the country can obtain by buying for a short time in the cheapest market. It is this temporary character of the dumping that gives valid ground for checking it, and, as we have shown, it must, by its very nature, be temporary. But in using the word 'temporary,' it must be remembered that, as Marshall has pointed out, no accurate results can be expected from the application of any economic principle unless a considerable period of time is taken into account. By 'temporary' here is meant five or ten or fifteen years as opposed to a hundred. It is the long view that must condition all economic theory. The same system of bounties exists in the shape of direct bounties for export, special reductions in freight, purchase of coal and coke, etc., in depreciated marks from Germany, in Belgium and on the Continent generally for the export of iron and steel as the export bounties on sugar, to which Professor Taussig refers. Just as Great Britain in that case was the one great dumping ground for continental sugar, so is India the one great dumping ground for steel in the world by reason of its large demand, the cheap freight available owing to the fact that it is a large exporter of food grains, and the fact that practically every other country in the world, including the self-governing ones, has already erected a wall against such unfair competition.

XVII.

Direct bounties for export can be proved easily enough. But it is impossible to prove accurately the indirect concessions and advantages which we have indicated. They are no evidence of superior natural advantages or of superior manufacturing skill. The longer the end is postponed the worse will be the present dislocation of industry and the more difficult the eventual return to a settled state of things. Owing to the difficulties of getting at the facts it is impossible for India to do what Great Britain did in the case of the sugar bounties and to put a stop to those conditions by imposing countervailing duties, but this country can and should do this indirectly by raising the protective tariff against countries with depreciated exchanges, and if the suggestion for a duty of 33⅓ per cent. is accepted, this could be raised to 50 per cent. in the case of such countries or a sliding scale imposed as in the case of Canada which would vary as the exchange rose and fell from normal. Such a sliding scale might well be provided in all cases as exchange is an important factor in the problem.

XVIII.

Summary.

It has been shown that there is strong *primâ facie* ground for holding that the extraordinary development of the iron and steel industry in America during the last quarter of the last century was the direct result of the system of protection afforded. It would be easy to multiply such instances. Similar facts might be proved for other industries in the United States. Many similar examples can be found in the economic history of other countries, Germany, Canada and Japan, and in fact there is no producing country in the world with the single exception of England which has not sought to develop this national industry and succeeded in developing it by some form of protection. England would probably have adopted it were it not that by reason of the advantage which it possessed in starting the industry before other countries it was already a large exporting country before competition arose It has been shown that such protection afforded to a young industry is not opposed to the doctrine of free trade and is indeed advocated by its principal adherents. It has also been shown that the position of the industry in India is peculiarly similar to that of the industry in America and Germany when protection was first adopted by those countries and that similar results, although not on so large a scale or in so short a time, may be confidently expected to follow its adoption in this country. It has also been shown that time must be given for the effect of such measures and that the measures which have been advocated are far lower than those adopted by other countries. In the first pamphlet the Indian Steel Industry as represented by the Tata Iron and Steel Company has been dealt with specifically, but the arguments adduced here are applicable to all young industries in the country whose development is economically sound and are put forward confidently in order to show that protection in this shape and for this purpose is not opposed to the general doctrine of Free Trade and is indeed approved by it.

Subsequent letter No. (i).

No. G-808/23, dated 24th/26th July 1923.

From—Messrs. Tata Sons, Ltd., Agents, The Tata Iron & Steel Co., Ld., Navsari Buildings, Fort, Bombay,

To—The Secretary, Tariff Board, Simla.

We have the honour to acknowledge receipt of your letter No. 32, dated Simla, the 17th instant. As desired therein, we are enclosing herewith the following statements:—

(1) A list of the various kinds of steel and steel products which the Company manufactures at present or expects to manufacture before the end of 1925.

(2) A statement showing year by year the outturn of pig iron and the various kinds of steel and steel products by the Company since production began up to 31st March 1923. As desired, in this statement the total quantity of pig iron produced as well as the quantity sold or disposed of is shown separately. The difference between the two is the tonnage of pig iron used up at our Works for conversion into steel or in our own foundries.

(3) A list of subsidiary industries already established at Jamshedpur or likely to be established before the end of 1925.

(4) With reference to paragraph 4 of your letter, we enclose herewith statements as at 31st March 1923, showing—

(*a*) amounts received on account of share capital from time to time;

(*b*) amounts received on account of Debenture Loan and loans secured by Debentures from time to time; and

(*c*) interest paid on Debentures and loans secured by Debentures from time to time.

As regards dividends on shares, our 50,000 First Preference Shares of the face value of Rs. 150 each carry a fixed cumulative dividend of 6 per cent., absorbing Rs. 4,50,000 per annum and our 700,000 Second Preference Shares of the face value of Rs. 100 each carry a fixed cumulative dividend of 7½ per cent., absorbing Rs. 52,50,000 per annum. We may add that in order to complete the Extensions we shall have to make a further issue of Debentures and our total issue of Debentures will be £4,000,000 or Rs. 6 crores. Our Debenture Loan carries interest at the rate of 7 per cent. per annum, but calculating at, say, 8 per cent. per annum in order to take care of discount at which the Debentures are issued, this gives a fixed annual charge of Rs. 48 lacs. We may also add that there will be another additional annual fixed charge on account of interest on the public loans and deposits and cash credit account from the Imperial Bank of India which provide the working capital of the Company. This interest will amount to about Rs. 14,25,000 per annum, if we take loans amounting to, say, Rs. 60 lacs and draw from the cash credit account, say, Rs. 150 lacs. These figures are based on our experience of our last fiscal year (1922-23).

(5) We have already sent you two sets of our annual reports issued to shareholders for five years commencing from 30th June 1918 to 31st March 1922 in compliance with your telegram of the 16th instant. As desired in your present letter, we are sending you a complete file of annual reports issued to shareholders from the very commencement. As we have no spare copies of reports from 1907 to 1913, we shall be much obliged if you would kindly return this file to us when done with.

(6) A list of the firms in India using steel for manufacturing purposes to whom the Company sold steel in 1922-23. This list is not exhaustive, but mentions only our large customers who use the steel themselves. Customers who trade in our steel as middlemen are not mentioned.

STATEMENT (*a*).

A list of the various kinds of steel and steel products which the Company manufactures at present or expects to manufacture before the end of 1925.

(*a*) *Kinds of steel.*

The Steel manufactured by the Company at present is by the **Basic Open** Hearth process.

(*b*) *Steel products being manufactured now.*

Rails with corresponding. Fish plates.	Joists.	Channels.
30 lb. F. F.	4″ × 1¾″	1½″ × 1¼″
35 lb. F. F.	5″ × 3″	1½″ × 1¾″
40 lb. F. F.	6″ × 3″	2″ × 1¼″
41½ lb. F. F.	7″ × 4″	3″ × 1½″
50 lb. F. F.	8″ × 4″	4″ × 2″
60 lb. F. F.	9″ × 4″	6″ × 3″
75 lb. F. F.	10″ × 5″	7″ × 3″
85 lb. F. F.	12″ × 5″	8″ × 3½″
88½ lb. B. H.	12″ × 6″	9″ × 4″
90 lb. B. H.	15″ × 5″	10″ × 4″
90 lb. F. F.	15″ × 6″	12″ × 4″

14 lb., 18 lb. and 24 lb. (light rails with Fish plates).

Equal angles.	Unequal angles.	Rounds.
1¼″ × 1¼″	1½″ × 1″	¼″ to 5″ diameter.
1½″ × 1½″	2″ × 1½″	
2″ × 2″	2½″ × 2″	
2¼″ × 2¼″	3″ × 2″	
2½″ × 2½″	5″ × 3″	
3″ × 3″	6″ × 4″	
3½″ × 3½″		
4″ × 4″		
5″ × 5″		
6″ × 6″		

सत्यमेव जयते

Flats.	Squares.	Tees.
1″ to 6″ and 8″	¼″ to 3¼″	2 × 2 × ¼″ 2½″ × 2½″ × ¼″

Octagons.
¾″ to 1¼″

A copy of our catalogue giving full particulars as regards the different sections of rails and structural steel is attached.

When the Greater Extensions are completed the output of rails and structural steel will be very much increased.

(*c*) We expect to manufacture the following materials before the end of 1925 in addition to the materials which are already being manufactured by our Works. Our present estimate is as follows:—

Steel Sheets.—36,000 tons. Width up to 38″ and any gauge from No. 10 to No. 32.

Steel Plates.—48,000 tons. ⅛″ to 1¼″ thick.

Steel Sleepers.—2,800 tons.

(*d*) When our Greater Extensions are completed, *i.e.*, within one year from date, we shall manufacture the following varieties of products:—

Rails.

30 lb. to 90 lb. Flat Bottom.
100 lbs. Bull-head.

Structural.

Beams.	Channels.	Angles.
24″ × 7½″		
20″ × 7½″	15″ × 4″	8″ × 8″
15″ × 5″		1″ × ⅛″ to 3″ × ½″
15″ × 6″		

Flats.	Rounds.	Squares.
12″ × 14″ ¾″ × ⅛″ to 4½″ × ½″ & thicker.	3″, 4″, 5″, 6″ and ¼″ to 2″	3″, 4″, 5″, 6″ and ¼″ to 2″

Rods.
¼″

Plates.

⅛″ to 1¼″ thick. Various widths to 84″ and various lengths up to 50 feet, length and width depending upon the thickness.

Sheets.

Width up to 38″ and any guage from No. 10 (⅛″) to No. 32 ($\frac{1}{100}$″).

सत्यमेव जयते

STATEMENT (*b*).

A statement showing year by year the outturn of pig iron and the various kinds of steel and steel products by the Tata Iron and Steel Company since production began up to 31st March 1923.

Period.	PIG IRON.		FINISHED STEEL.					Plate Mill.
			28″ MILL.		BAR MILL.			
	Total.	Sold.	Rails.	Structural materials.	Light rails and fish plates.	Structural materials.	TOTAL.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
July 1912—June 1913 . .	128,238	106,795	3,449	12,995	138	2,547	19,130	..
„ 1913— „ 1914 . .	155,383	97,698	32,459	8,683	2,928	4,802	48,872	..
„ 1914— „ 1915 . .	160,587	83,832	34,545	22,458	1,848	7,915	66,765	..
„ 1915— „ 1916 . .	157,257	60,200	17,156	50,551	1,733	21,560	91,000	..
„ 1916— „ 1917 . .	147,497	39,541	54,021	14,838	5,379	24,489	98,726	..
„ 1917— „ 1918 . .	188,253	34,436	69,087	13,580	7,321	33,902	123,890	..
„ 1918—March 1919 . .	158,395	31,312	53,415	16,376	6,186	26,021	101,988	..
April 1919— „ 1920 . .	218,845	69,360	52,801	35,183	6,441	27,801	122,226	..
„ 1920— „ 1921 . .	253,996	93,820	60,440	25,961	7,738	28,217	122,356	..
„ 1921— „ 1922 . .	270,270	104,042	77,880	18,393	6,580	23,018	125,871	..
„ 1922— „ 1923 . .	242,083	103,474	65,358	17,301	5,506	26,670	114,835	1,833

STATEMENT (c).

A list of subsidiary industries already established at Jamshedpur or likely to be established before the end of 1925.

No.	Name of the Company.	Managing Agents, etc., and Registered address.	Capital			Finished Products to be manufactured.	Total annual output.
			Authorised.	Subscribed.	Paid up.		
			Rs.	Rs.	Rs.		
1	Enamelled Ironware, Limited	Managing Agents, Messrs. Kilburn & Co., Post Box No. 61, Calcutta.	15,00,000 Issued 10,00,000	10,00,000	9,87,000	Enamelled Ironware of various descriptions.	In the neighbourhood of 200 tons.
2	The Indian Cable Co., Limited	Managing Agents, The British Insulated & Helsby Cables, Ltd.	30,00,000	17,00,000	16,60,000	Copper wire, rubber covered cables.	Unable to give any particulars about output.
3	The Tinplate Company of India, Limited.	Managing Agents, Messrs. Shaw Wallace & Co., 4, Bankshall Street, Calcutta.	75,00,000	75,00,000	75,00,000	Tinplates.	28,000 to 30,000 tons when operating at full capacity.
4	The Calmoni Engineering Co., Ltd.	General Manager, Tatanagar, B. N. Railway.	37,50,000	28,00,000	28,00,000	Jute Manufacturing Machinery.	300 tons of machinery, 1,000 tons of castings.
5	The Agricultural Implements Company, Limited.	Agents, Messrs. Vithaldas Damodher Thackersey & Co., 2, Rampart Row, Fort, Bombay.	25,00,000	25,00,000	25,00,000	Picks, Pickaxes, Beater picks, miners picks, kodalies, trenching hoes, Ballast, rakes, crowbars, plate layers' tools and sledge hammers.	4,000 tons.
6	The Indian Steel Wire Products, Limited.	Agents, Messrs. Lalubhai Walchand Capadia & Co., 65, Apollo Street, Fort, Bombay.	Authorised 50,00,000 Issued 25,00,000	24,82,100	24,82,100	(a) Wire. (b) Wire Nails. (c) Metal Shelving. (d) Structural Steel.	5,000 tons wire, 5,000 tons metal shelving.
7	The Peninsular Locomotive Company, Limited.	Tatanagar, B. N. Ry.	Authorised 60,00,000. Issued 16,50,500.	16,50,500	Not known.	Locomotives.	Cannot at present give any information regarding output.

STATEMENT (*d*).

A statement showing amount received on account of share Capital from time to time as at 31st March 1923.

Number of shares.	Old Ordinary.	First Preference.	Old Deferred.	New Ordinary.	New Deferred.	Second Preference.	Capital Total Call.	Due date of call made on shareholders.
	2,00,000	50,000	22,500	1,49,609	26,142	7,00,000	Amount.	
Application	5	10	5	..	..	..	16,12,500	13th Aug. 1907.
Allotment	10	20	25	..	..	..	35,62,500	26th Oct. 1907.
First Call	5	10	..	..	..	..	15,00,000	16th Mar. 1908.
Second Call	15	30	..	..	..	..	45,00,000	7th Apr. 1909.
Third Call	15	30	..	..	..	..	45,00,000	14th May 1910.
Fourth Call	10	30	..	..	..	..	35,00,000	10th Nov. 1910.
Fifth Call	..	20	..	..	..	..	10,00,000	27th Mar. 1911.
Sixth Call	15	..	..	..	..	..	30,00,000	1st May 1911.
Application and Allotment . .	..	..	..	15	10	..	25,05,555	10th Aug. 1917.
First Call	..	..	..	15	5	..	23,74,845	15th Nov. 1918.
Second Call	..	..	..	15	5	..	23,74,845	30th Sept. 1919.
Third Call	..	..	..	15	5	..	23,74,845	1st Mar. 1920.
Fourth Call	..	..	..	15	5	..	23,74,845	5th July 1920.
Application and Allotment . .	..	..	..	..	..	10	70,00,000	28th Feb. 1919.
First Call	..	..	..	..	..	15	1,05,00,000	20th Sept. 1920.
Second Call	..	..	..	..	..	15	1,05,00,000	24th Jan. 1921.
Third Call	..	..	..	..	..	15	1,05,00,000	1st June. 1921.
Fourth Call	..	..	..	..	..	15	1,05,00,000	3rd Oct. 1921.
Fifth Call	..	..	..	..	..	15	1,05,00,000	6th Feb. 1922.
Sixth Call	..	..	..	..	..	15	1,05,00,000	12th June 1922.
Rs. .	75	150	30	75	30	100	10,51,79,935	

STATEMENT (*e*).

A statement showing amounts received on account of Debenture loan and loans secured by Debentures from time to time as at 31st March 1923.

Debenture loan.

Date.	Amount.	Remarks.
	Rs.	
1911		
September 30	12,50,000	
October 31	12,50,000	
November 30	12,50,000	
1912		
January 3	12,50,000	
December 19	10,00,000	
1916		
April 1	5,50,000	
April 8	10,50,000	
November 25	25,00,000	
1917		
September 1	25,00,000	
1918		
May 1	25,00,000	
1919		
January 2	25,00,000	
September 4	10,00,000	
October 14	14,00,000	
	2,00,00,000	
1922		
August 31	3,10,00,000	Out of this sum the old Debenture Loan of Rs. 2,00,00,000 is paid off.
1923		
January 1	15,00,000	
	3,25,00,000	

सत्यमेव जयते

Loans Secured by Debentures.

Date.	Amount.	Remarks.
1922	Rs.	
September 6	90,00,000	
1923		
January 31	25,00,000	
	1,15,00,000	

STATEMENT (*f*).

A statement showing Interest paid on Debentures and loans secured by Debentures from time to time as at 31st March 1923.

Interest on Debenture Loan.

Year.	Amount.			
	Rs.	A.	P.	
1911-1912	1,71,874	15	9	
1912-1913	3,04,270	13	4	
1913-1914	3,30,000	0	0	
1914-1915	3,30,000	0	0	
1915-1916	3,50,852	14	0	
1916-1917	4,30,660	2	9	
1917-1918	7,18,000	0	0	
1918-1919	6,87,575	5	5	for nine months.
1919-1920	10,91,561	10	3	
1920-1921	11,62,000	0	0	
1921-1922	11,62,000	0	0	
	67,38,795	13	6	
1922-1923	19,74,191	1	5	

Interest on Loans secured by Debentures.

	Rs.	A.	P.	
1922-1923	3,42,499	0	0	

STATEMENT (g).

List of the firms in India using steel for manufacturing purposes to whom the company sold steel in 1922-1923.

Messrs. Burn & Co., Calcutta.
,, Martin & Co., Calcutta.
,, Richardson & Cruddas, Bombay.
,, John King & Co., Calcutta.
,, Jessop & Co., Calcutta.
,, Agricultural Implements Co., Jamshedpur.
,, Tinplate Co. of India, Ltd., Jamshedpur.
,, Bird & Co., Calcutta.
,, Armstrong & Main, Calcutta.
,, Balmer Lawrie & Co., Calcutta.
Mr. J. C. Bannerji, Managing Agents, Bengal Bridge & Bolt Co. Calcutta.
Superintendent, Patna Iron Foundry, Patna.

सत्यमेव जयते

Subsequent letter No. (2).

No. G.-1273/23, dated the 5th November 1923.

From—Messrs. Tata Sons, Ltd., Agents, The Tata Iron and Steel Co., Ltd., Bombay,
To—The Secretary, Tariff Board, Calcutta.

We are in receipt of your letter No. 427 of the 16th October 1923 and as desired by you, we give the following information:—

In reply to the second paragraph of your letter, the amount arrived at by multiplying the cost per ton by the tonnage of pig iron for sale and finished steel does not tally with the expenses of operation shown in the Profit and Loss Account, because in the Profit and Loss Account, the value of stock at the beginning of the year is included in the expenses for Operation Departments and also the operation expenses of collieries. In the Cost Sheets for pig iron the coke used per ton of pig iron is calculated at the net coke cost arrived at after deducting the profit made from the sale of the bye-products and also second class rails are credited in the Rail Mill cost, thereby reducing the cost. If these factors are taken into account the cost figures will be found to be practically equal to the Profit and Loss Accounts. In the year 1921-22 two Profit and Loss Accounts were prepared, one for three months ending 30th June 1921 and the second for nine months ending 31st March 1922. In the two accounts the value of stocks on 1st April 1921 and 1st July 1921 is shown in the Operation Expenses. We give below the figures (based on Cost Sheets) which practically tally with the Profit and Loss Account:—

Figures according to Cost Sheets for 1921-22.

	Tons.		Value Rs.
Pig available for sale	107,270	Works Costs Rs. 34,47	36,97,596
28″ Mill products	96,273	Works Costs Rs. 116.00	111,67,466
Bar Mill products	29,598	Works Costs Rs. 135.50	40,10,383
			188,75,445
Sale value of bye-products			5,18,317
Second class rails (credited in the 28″ Mill cost thereby reducing the cost of rails)			9,55,907
			203,49,669

सत्यमेव जयते

Profit and Loss Account figures for 1921-22.

	Rs.
Expenses on production of pig, steel products, bye-products materials, coal, etc., for three months ending 30th June 1921 including value of stock on 1st April 1921	116,33,228
Expenses on production of pig, steel products, bye-products materials, coal, etc., for nine months ending 31st March 1922 including value of stock on 1st July 1921	223,84,563
	340,17,791

Less—

	Rs.	Rs.
Value of stocks of pig, steel products, etc., on 1st April 1921 and operation cost of collieries for three months and stock of coal on 1st April 1921	63,29,466	
Value of stock of pig and steel products on 1st July 1921 and operation cost of collieries for nine months and stock of coal on 1st July 1921	69,25,756	132,55,222
		207,62,569

A statement for the year 1919-20 worked on the above basis is also attached.

As regards the third paragraph of your letter under reference, we beg to inform you that the statement mentioned therein was supplied on the 27th August 1923; in this connection you enquired on the 28th August as to the details of the proceeds realised by sale of pig, bye-products, etc. We referred the matter, in your presence, to the Chief Accountant who had already forwarded a revised statement. For your ready reference we enclose copy of the same.

As regards 4th, 5th and 6th paragraphs of your letter under reference, the information will be supplied in due course.

STATEMENT (*a*).

Statement showing expenses on production of Pig, Steel Products, Bye-products materials, etc., for the year 1919-20.

Expenses according to Cost Sheets for 1919-20—

	Works costs.		Value Rs.
Pig available for sale .	73,448 tons at Rs. 27.04	=	19,86,063
Big Mill materials . .	87,985 tons at Rs. 93-14.49	=	82,62,252
Bar Mill materials . .	34,242 tons at Rs. 102-4.27	=	35,01,836
			137,50,151
Second class rails (credit was given in the 28″ Mill, thereby reducing the cost of rails)			2,38,754
Sale value of bye-products			7,18,914
			147,07,819

Expenses of operation according to Profit and Loss Account—

	Rs.	Rs.
Expenses on production of pig, steel products, bye-products materials, etc., including value of stock on 1st April 1919		192,90,516
Less value of stock on 1st April 1919		30,31,014
		162,59,502
Less Drag Ovens	2,00,000	
Strike expense	5,82,456	
Provident Fund	1,00,000	8,82,456
		153,77,046

This amount practically tallies with that arrived at on the basis of Cost Sheet.

STATEMENT (*b*).

Sale proceeds of Pig Iron and Bye-products for 1921-22 and average price per ton.

				Average price per ton.
Pig Iron	Tons	96,159-8	Rs. 96,95,629	Rs. 100.829
Coal Tar	Tons	3,087-10	Rs. 1,68,045	Rs. 54.427
Sulphate of Ammonia .	Tons	2,374-3	Rs. 3,84,589	Rs. 161.990
Scrap	Tons	1,807-15	Rs. 1,27,289	Rs. 70.413
			Rs. 103,75,552	

Subsequent letter No. (3).

No. G. 1275, dated 5th November 1923.

From---Messrs. Tata Sons, Ltd., Agents, The Tata Iron and Steel Co., Ltd.,

To—The Secretary, Tariff Board, 1, Council House Street, Calcutta.

We have the honour to acknowledge receipt of your letter No. 396, dated the 10th October 1923, stating that it has been represented to the Tariff Board that the policy adopted by this Company of planning the Greater Extensions during the war and carrying out the construction during the period immediately after the war was shortsighted and has led to a great and unnecessary increase in the capital expenditure.

2. If the policy of embarking on these Extensions was shortsighted, we think we can satisfy the Tariff Board that that shortsightedness was shared both by the Government of India and by the Imperial Government. We do not, however, ourselves consider that the policy was shortsighted, nor do we consider that the total cost of the plant, when completed, will be in any way extravagant, having due regard to the increase in prices which has followed on the war. Taking the weighted output of our saleable products for which calculation we reckon two tons of pig iron as equivalent to one ton of steel, the total saleable tonnage will be about 441,070 tons. The total block capital and working capital employed in 1915-16 was Rs. 3,69,00,000 or Rs. 313 per ton of saleable product. The total block capital and working capital, when the Extensions are completed, will be Rs. 21 crores for block capital and Rs. 5 crores for working capital, or Rs. 26 crores altogether. Deducting Rs. 4·88 crores for reserve and depreciation, the total figure is Rs. 21·12 crores or Rs. 479 per ton of saleable products. A statement is attached showing this (Statement A). The comparison is as 100 to 153 per ton of saleable product, and this percentage is considerably under the present index figure showing the increase in prices for machinery and electrical equipment of this nature which we believe to be 160.

3. We attach to this letter a full statement, Statement B, of the circumstances in which the scheme of the Greater Extensions was worked out and finally put through together with copies and extracts from the relevant documents. We summarise this briefly. It will be seen that between the years 1915 and 1917 the Steel Company repeatedly placed this scheme for extension before the Government of India and the Military Authorities in England and that owing to their advice and suggestion certain changes were made in the proposed scheme. During this period Government encouraged the scheme though it did not actually assist it. Under the pressure of War conditions, however, their attitude was changed and in 1917 representatives of the Company were specially summoned to Delhi to discuss the method of increasing the supplies of steel available for Military requirements. We may refer to the record of the discussion, Marked C, between Mr. Tutwiler, the Military Department, Commerce and Industry Department, and the

Railway Board, when we were asked what was the quickest method by which we could increase our steel production and were offered all possible assistance in doing this. Subscriptions to the capital necessary were invited in December 1918. Under the regulations then existing, this could not have been done without the consent, Marked E, of Government and Government would not have agreed to the raising of the capital if they had not considered this a matter of national importance. The application, marked D, was made at the crisis of the war and the main ground on which permission was asked for was the expected increase in the demand for steel from Government. That the extensions were regarded as an urgent war measure and of national purpose would be proved by the cables, Cables F, passed between the British Government and the Foreign Office in June 1917, in which the British Government asked the assistance of the United States Government in forwarding the plant, the employment of which they stated meant much needed increase in steel production for national purposes. We may further refer to the President of the Munition Board's interview with the Steel Company in September 1917. As a result of this the Company undertook to do all in their power to expedite the construction of the Steel Plate Mill, Duplex Open Hearth Tilting Furnace and all connected subsidiary work. Government on their part, without agreeing to give any direct financial assistance, undertook to give facilities in obtaining and importing machinery and the necessary skilled labour, to guarantee a market for 10,000 tons of plates per annum and to make available for the Steel Works as much steel and wrought iron scrap as could be secured in order to increase the output of steel for war requirements. Finally, in August 1918 the Government of India (Indian Munitions Board) requested the English Government to release the material for the plant which was held up in America as an urgent war measure, Cable C.

4. We trust that this will satisfy the Tariff Board that the scheme of Extensions as outlined by the Steel Company was regarded as a matter of national importance and of great war urgency not only by the Government of India but also by the Imperial Government and that but for their direct assistance by the grant of priority and permission for the raising of the fresh capital, the scheme could not have been carried through and orders for machinery could not have been placed by the Steel Company.

STATEMENT (*a*).

Statement showing Block, Working Capital, Funds for the years 1915-16 and after Greater Extensions (1925-26).

	1915-1916.	Cost per ton of weighted output.	After Greater Extensions. 1925-1926	Cost per ton of weighted output.
	Rs.	Rs.	Rs.	Rs.
Block	2,73,43,764	232	21,00,00,000	476
Working Capital . . .	1,25,57,822	107	5,00,00,000	113
TOTAL .	3,99,01,586	339	26,00,00,000	589
Less Funds	29,97,753	26	4,88,08,000	110
TOTAL .	3,69,03,833	313	21,11,92,000	479
Weighted output . . Tons	117,685	..	441,070	..

STATEMENT (*b*).

27th October 1923.

THE TATA IRON AND STEEL COMPANY, LIMITED.

GREATER EXTENSIONS.

In February 1915, Mr. Perin first suggested increasing the capacity of the existing furnace by the addition of blowing power. Later in the same year he suggested having additional Open Hearth or Duplex tilting and a third Blast Furnace for pig required in the additional steel furnaces. He was sanguine about the raw materials, taking into consideration the new deposits applied for by the Company, and the water supply, but recommended buying substantial interests in some large collieries if an additional Blast Furnace was put up. Lengthy correspondence ensued on this subject and in October 1915 Mr. Padshah (London) went over to America to consider, among others, the question of finance. Mr. Padshah considered the trouble was the finding of capital expenditure and working capital.

2. In July 1915, Sir William Clark, Member, Government of India, Commerce and Industry Department, who was on a visit to Bombay, wrote to Mr. Padshah expressing his desire to see him with a view to discussing the question of the supply of munitions. Mr. A. J. Bilimoria saw Sir William Clark on the 2nd July. The object of Sir William's enquiry was to find out if Government needed Iron Company's help, could they purchase from the Works iron and steel required for the manufacture of munitions. Sir William made special enquiries relating to the Company's Coke Ovens and whether they would produce benzol as a bye-product. He was informed that the Bye-Products Coke Ovens were then under construction and had not been completed.

3. Mr. Padshah was in New York in 1915. In November 1915 he advised that Mr. Perin had given a comprehensive scheme, including Sheet and Plate Mills, Wagon Factory, Steel Sleeper, Benzol Plant, increased steel capacity by converting stationary furnaces under contemplation to Duplex furnaces, Pig casting machines, etc.

4. On 11th November 1915 the Iron Company's Board discussed the question of Benzol, Pig casting machine, additional steel furnaces, Sheet and Plate Mills, Wagon Factory, Steel Sleeper Plant, and increase of pig iron capacity. At the next Board meetings on the 17th and 25th November and 2nd December the subject was further discussed. It was decided not to take over the Benzol Plant offered to us and further enquiries as to the available pig iron for sale in the country were to be made. The subject was again discussed at the next Board meeting on the 9th December, when certain additional sums were sanctioned for converting the two Open Hearth furnaces into one Tilting Furnace and duplexing the existing Open Hearth furnaces to ensure an output of 18,000 tons.

5. On the 30th November 1915, Mr. Padshah and Mr. Treble had an interview with Mr. Austin Chamberlain, the Secretary of State for India. The object of the interview was to explain personally the proposition contained in the Memorandum submitted to the Secretary of State through Sir Lionel Abrahams, to extend the production of the Steel Works at Jamshedpur in such a way as to meet the requirements of the British Empire East of the Suez in the matter of armaments. The resources of the Steel Company would be developed as to give 3,000 tons of shell steel a day and to roll the steel into shell bars. It was pointed out that in making the proposition it was not intended to secure for either the Company or for the Firm of the Agents any extraordinary profit but that in view of the fact that extensions had been sanctioned by the Board which would bring up the daily capacity of the Works from 350 tons to anything between 600 and 800 tons, it was considered expedient to offer the services of the Company for the establishment of a permanent armament reserve for the British Empire East of the

Suez. If such a plan recommended itself to the British Government, arrangement could be made, while extending the Plant as sanctioned by the Board, to increase that extension up to a maximum of 3,000 tons per day. Mr. Chamberlain discussed the question from the point of view of the possible requirements of armaments and the method of finance of establishing what would amount to practically an Arsenal in India. As to the question of finance, Mr. Chamberlain was of opinion that it would be a great departure for Government to guarantee the interest on an industrial concern. The guarantee of Railway interest for economical purposes was one thing and the guarantee of interest on an industrial concern for warlike purposes was another. So far as the argument that the Government had advanced the manufacturers of munitions capital sums of money was concerned, that argument had great merits if such advances would produce munitions for use in the present war, but to apply the argument for further wars was a matter which called for most serious consideration. While not condemning the proposition in its entirety and while declining to further the proposition in any way officially, he thought that conversation might be pursued with the Government of India, who in their judgment might forward the scheme for consideration through the proper channels to the proper quarters.

6. In January 1916, while at Sakchi, the Board discussed the whole scheme of Extensions. The decision to construct two additional stationary steel furnaces of the same type as the existing one but of 60-ton capacity, was to proceed without delay.

7. Regarding the fuller scheme of extensions the Board wanted an exhaustive report and thought it would be better to have such extensions as a separate second Unit of the Works.

8. All through 1916 on several occasions the Board discussed the question. Mr. R. D. Tata in a memorandum, dated the 3rd April 1916, explained why after a closer study he had changed his views and whole-heartedly supported the scheme of Greater Extensions. Japan was seriously setting to work to increase its iron and steel production; the area of Japan was less than $\frac{1}{12}$th of British India; the population of Japan was about $\frac{1}{6}$th of British India and yet the production of steel was 300,000 tons per annum or twice that of the Iron Company. The Japanese Government proposed to extend it to 600,000 tons and in addition there were other private Works. All this shows how carefully and thoroughly the proposals were investigated. The results expected may not have been obtained but there was nothing short-sighted or rash about the way in which the decision was arrived at.

9. In May 1916, Mr. Perin submitted his full report and estimates on the scheme of Greater Extensions. The scheme was to increase the tonnage from 16 per cent. to approximately 30 per cent. of India's steel consumption and to so diversify the product as to enter several branches of the market in which there was a constant demand but which the Company had been unable, through lack of plant, to supply. The greatly stimulated output per man of the countries which are Iron Company's competitors necessitated the bringing up of the Plant to a greater economy of operation and generally increased efficiency. When the war was over, severe competition would arise from a number of quarters.

Mr. Perin recommended the securing of necessary machine tools to carry out all the structural work at Sakchi and to build and machine all castings both steel and iron required for the different mills. These tools would form a part of the plant when construction work was finished and would enable the Company to enter the market for finished iron and steel castings of practically the largest dimensions which the Orient was likely to require for some time. Each step, Mr. Perin recommended, had been studied with a view to make the plant more self-contained and at the same time to enable the Company to perform a public service in ultimately giving India cheaper iron and steel than could possibly be obtained from foreign sources.

The making of sheets and plates would enable the Company to attract to Sakchi other industries which would be consumers of the Company's products.

10. Mr. Perin arrived in Bombay on the 25th of July 1916. The next day the whole scheme was explained by him to the Board including the discussions with the Military Authorities regarding their requirements of steel. Even if the war were over shortly it would take more than two years for normal conditions to return.

11. Early in September 1916 the whole scheme was placed before the Government of India, Commerce and Industry Department, as well as the Railway Board, not with the object to invite any contribution from Government but to bespeak their support and encouragement. It was explained that the Steel Company must bring down its costs, first by economising labour and ensuring automatic accuracies, and secondly by reduction of overhead charges necessitated by the engagement of the highest skilled labour. Increase in the scale of production would bring about the desired reduction of costs through both these factors. The Steel Company will increase production and diversify its products—it will make sheets and plates and wire. If subsidiaries would not come in to take up the increased product, the Steel Company would have to itself go into the manufacture of more finished goods. Sir Robert Gillan, Chairman of the Railway Board, went out of his way to express his pleasure at the enlightened policy of the Steel Company sharing its responsibilities for production with all newcomers (Associated Companies) and expressed his determination to help to the best of his power the Steel Company which he recognised was doing very great work for India. The attitude of Government towards the Steel Company at that time is well shown by the following extract from Mr. Padshah's record of the interview:—

> "Mr. Anderson said that the present position of the settlement of prices as between the Railway Board and the Steel Company was not satisfactory. He himself came in for criticism for trying to squeeze the Steel Company. I took the liberty of assuring him that the Steel Company are quite content with the prices which the Railway Board pay. It is true that within the two years the Railway Board has saved the British and Indian Governments about Rs. 100 lakhs as against what the two Governments would have had to pay if the Steel Company had not been in existence, supposing that without the Steel Company they would have obtained the 100,000 tons of steel which Government are going to get from the Steel Company before the war is through. Mr. Anderson acknowledged this. He said that the Railway Board are going to make a special mention of it in their report to the Secretary of State; but he wishes a counter acknowledgment from the Steel Company that this reduction of its profits is just in view of the services rendered by Government in fostering the Steel Company. I at once explained that there had been not the least discontent either in the Steel Company's Directors or the shareholders. They recognize the reduction of profits and they recognize the duty of the Steel Company to show by a spontaneous submission to this reduction their high sense of Government help in bringing the Steel Company into existence. The Steel Company is more than content with the reduction, if the reduction be acknowledged, and kept on record by the Railway Board. When lean times come, this acknowledgment would be a help to the Steel Company."

12. On the 27th September 1916 a scheme, as a result of enquiries all over India of the requirements of the country modifying or enlarging Mr. Perin's report of May 1916, was laid before the Board and as a result of the discussion the Board sanctioned the fourth Blast Furnace. This brought up the

cost of the Extensions to Rs. 480 lakhs plus Rs. 250 lakhs for working expenses.

13. In October 1916 there was D. O. correspondence with Mr. Low of the Commerce and Industry Department of the Government of India regarding Mr. Perin seeing the India Office officials on his return to London. Mr. Perin met the officials in London and explained the scheme. He advised "that the suggestions the British Government had made in regard to the materials to be made have caused a change in the design of our Sheet, Bar, Billet and Sleeper Plate Mill from four 21″ Mill to six 24″. This change necessitated two independent drives instead of one large motor. The sum total of expenditure is much greater but the efficiency in the case of Government requirements is greater."

14. In November 1916 a Circular was issued to the shareholders of the Iron Company recommending the increase of capital for the extensions. The scheme was passed on the 12th of December 1916 and confirmed on the 1st January 1917.

15. On the 13th of January 1917 the Secretary to the Government of India, Department of Commerce and Industry, Delhi, telegraphed to Tata Sons as follows:—

> "Government wish to consult Padshah or responsible representative of firm regarding increased output of steel and measures possible for rendering larger supply immediately available for military requirements. Could he arrange to visit Delhi some day next week?"

In response to this invitation Mr. Padshah and Mr. Tutwiler proceeded to Delhi and discussed the matter with the Government of India. The officials of Government encouraged and gave the fullest support to the extensions. A record of the discussions is attached herewith.*

16. By April 1917 orders had been placed for Coke Ovens Blast Furnace, a large amount of machine tools, boiler plant, crane equipment and Turbo Blowers.

17. In May 1917 Mr. Perin proposed going over to London to consult Mr. Padshah and secure through him a request from the Imperial Government that the United States of America Government should give preference to Iron Company's orders for steel plates amounting to 3,900 tons. He had made a case at Washington before the Secretary of Commerce and the Shipping Board which required the support of the British Government.

18. Between May and June of 1917 there was again D. O. correspondence with Sir Thomas Holland about the assurance of the Bihar and Orissa Government as to the adequacy of the water supply and Sir Thomas Holland intimated that Government had offered to help forward the zinc smelting project and had telegraphed terms to the Secretary of State.

19. In June 1917 the Foreign Office sent the following cable marked F to the United States Government:—

> "Tata Steel Works India Extension materials amounting to 15,000 tons will be offered in approximately equal amounts during course of next 12 months. British Government request your assistance forwarding this material, employment of which means *much needed increased steel production national purpose.*"

The Foreign Office further instructed His Majesty's Ambassador at Washington to ask the United States Government to facilitate the shipment to India of material and machinery for the Greater Extensions. Had the war continued and had our plant been given up to its final completion the priority which Government then pressed both upon us and upon the manufacturers, much of the expenses would have been saved. This was impossible because with the conclusion of the war, control was removed and our plant was delayed and the expenditure on it increased owing to the high prices that resulted from the boom following the war.

---

* Marked C.

20. On the 13th of June 1917 Mr. Perin had an interview in London with the Members of the Ministry of Munitions and obtained their assurance or support to obtain priority for shipment and other privileges in connection with materials being purchased in America. They also promised assistance in the matter of the delivery of machine tools ordered in England.

21. On the 16th August 1917 Iron Company's Board gave sanction for the foundations of the Merchant Mill, the Sheet Mill and the Plate Mill.

22. In September 1917 when Sir Thomas Holland, Director of the Indian Munitions Board, was in Bombay, he discussed the subject of the supply of steel by the Iron Company to the Government with the Agents and was present at a meeting of the Board of Directors of the Iron Company on the 13th September 1917. Sir Thomas pointed out that the entire output of steel at Jamshedpur was required by Government for rails and accessories for military and strategic purposes and no part of the steel output could be diverted to the proposed Plate Mill to be rolled into Plates, which would have the effect of reducing the output of rails and the accessories. Sir Thomas therefore pointed out that unless side by side with the installation of a Plate Mill, an Open Hearth Furnace was also installed to provide steel for the Plate Mill, it would be of no advantage to Government. The Directors thereupon expressed their readiness to instal the Duplex Open Hearth tilting furnace also as an urgent war measure. In that case Government and the Steel Company should share half and half such extra costs over the estimates of May 1916 which may be incurred on account of obtaining the material during war time. Sir Thomas Holland desired the proposal to be officially submitted to Government (letter marked H). This was done by letter No. G.-2102 of the 14th September 1917. Please see cables of 5th and 10th September 1917 from Tata Limited, London (Cables marked I).

Ultimately it was arranged that the Company should put up the Plate Mill without any contribution from Government—the Government to facilitate obtaining and importing machinery and men and guaranteeing taking 10,000 tons plates at Calcutta price c.i.f. for a period of 10 years. The Munitions Board had also agreed to recommend Government issuing urgent war measure priority for all plant and material from England or America for the full extensions. On these assurances, the Engineers were authorised to place orders immediately. This arrangement was confirmed by the Government of India, letter No. G.-3 (marked J) of the 11th January 1918 (copy attached).

23. At a Board meeting on the 7th November 1917 Mr. Perin proposed to convert the pot sleeper foundry into a general foundry, where all castings including steel castings, could be made.

24. Great difficulties were experienced with the shipments of material—first, by the loss of steamers through enemy action and secondly, by the commandeering of tools in England and even in Canada for gun turning and other munition work. Altogether 19 shipments, valuing about 10 lakhs of rupees were lost, through enemy action. The loss was a severe set-back, as they included machine tools, electric material, generators, locomotives, silica and magnesite bricks. At times an engine and generator were ready but the plant useless as the transformer had been commandeered or lost by enemy action.

25. *Batelle Furnace.*—In spite of these delays the Batelle Furnace was purchased complete in America, dismantled and shipped on the 21st of January 1918 and erected at Jamshedpur and commenced production on the 27th August 1919.

26. In February 1918 the Government of India made a special effort and released the 5000 K. W. Turbo Generator [see copy of letter No. G.-3 (marked K) of 13th February 1918 attached].

Some idea may be had of the efforts made to secure freight from a persual of Mr. S. M. Marshall's letter (marked L) of the 18th May 1918 to Mr. Perin (copy attached).

Letter dated 21st August 1918 from Sir Thomas Holland to Sir Thomas Holderness, Under Secretary to the Secretary of State (marked M, copy attached), shows clearly that the proposed extensions were "regarded without hesitation as war measures" specially the Plate Mill. Also telegram No. G.-3 of the 21st August 1918 from His Excellency the Viceroy to the Secretary of State for India recommending the grant of priority for shipments.

In September 1918 the Indian Munitions Board (P. 2551-60 of 7th September 1918) communicated the following information:—

> "United States Priority Committee have granted same priority rating for Tata Iron Company Plate Mill requirements as allowed to Steel Companies in United States working on United States Government contracts. Marshall, New York, is ascertaining from Manufacturers if this rating will enable him to give desired deliveries. If satisfactory deliveries not obtained, United States Committee will be requested to grant increased rating. Attention American War Industries Board drawn to fact that output will be taken by Government of India for urgent war work."

27. In October 1918 was placed before the shareholders the scheme for further finance by the issuing of 7 crores of capital when the arrangements with the Subsidiary Companies, the increase in estimates owing to war condition, the output practically taken up by the Government and Railways, etc., were all explained.

28. In November 1918 the Armistice was signed and the war was practically over. It was however not possible to cancel any of the orders placed for plant and machinery. Owing however to the dislocation of business in all places, none of the manufacturers kept to the deliveries that had been quoted. All Government control over shipping was withdrawn and the priorities that had been promised by Government were not maintained. Thus the completion of the Greater Extensions, which otherwise might have finished in 1920, will be completed by 1924.

सत्यमेव जयते

STATEMENT (c).

Delhi, 3 P.M., dated 19th January 1917.

Notes by Mr. Tutwiler of Meeting held in General Bingley's Office.

PRESENT:

General Bingley. General Stewart. Colonel Renny.	Military Department.
Sir George Barnes. Mr. Howard.	Commerce and Industry Department.
Sir Robert Gillan. Mr. Anderson.	Railway Board.
Mr. T. W. Tutwiler.	The Tata Iron and Steel Co., Ld.

General Bingley asked what was the thing that could be done quickest to increase our steel production. I told him to get us a supply of 50,000 silica brick monthly that would allow us to finish the construction of the two steel furnaces that were under construction and increase our steel output 50 per cent. After asking our present sources of supply and being informed that they were Japan and England, it was decided to see if pressure could not be brought especially on Japan and bring in a boat load of about 1,000,000. I told them Mitsui's were the people we bought our bricks through. It was also decided to put pressure on Birds at once to push their output. I told them Birds were pushing on but so far had not been able to give us very much on account of machinery break downs, but had promised a lakh in January which I very much doubted their supplying. I also said that we should not count too much on them as the brick were still in an experimental stage and they should insist on 50,000 monthly either from Japan or England. They asked about our future extensions and I told them they could not be completed under three years and that only with Government's aid in expediting despatches of the necessary machinery and other materials. General Stewart spoke of their wants regarding Hematite Pig; for acid steel I told him he could not expect it to be made in India, for although the ore was available, the coke was too high in Phosphorus. He told Colonel Renny to build a 20-ton Basic Open Hearth Furnace at once and wanted to know if he could depend on us for Basic Pig and Magnesite. I told him yes. He then asked if he built this furnace if we would spare him a man to help them get going. I told him we would, and upon being asked whether we would let his men visit our plant, I told him we would, as I had received a letter from Sir D. J. Tata asking me to entertain and show their representative our plant. He was very cordial and said he was going to pay us a visit himself the first opportunity he had.

Sir George Barnes asked several questions regarding our bricks and suggested wiring Ironside to put pressure on Gould to speed up. He also acquiesced in the Japan arrangement.

General Bingley said that he had called the meeting as the Commander-in-Chief wanted to know what we could do. Before the arrival of the gentlemen who had been asked to attend the meeting, Mr. Howard and myself had a short talk with General Bingley when I told General Bingley of my conversation with Sir Robert Gillan and Mr. Anderson regarding coal stating they had assured me that we would be taken care of. After the meeting broke up I told Mr. Anderson what I had told General Bingley and he said that, although he could not exactly promise he thought I could rest easy. I also think we can, for in the conversation this morning with Mr. Anderson and Sir Robert Gillan they talked of commandeering our requirements, saying how important we were, and that we must be kept going. Mr. Anderson said I was to telegraph them if we had any more trouble about coal.

General Bingley asked if we were getting our supplies and machinery for the extensions in America, saying he had heard so. I told him we were getting them anywhere we could, that England itself was buying American machinery and that it was a question of getting it where we could get it the quickest. General Stewart said we were right.

STATEMENT (*d*).

Copy of letter No. G.-1905, dated the 18th/19th September 1918, from Tata Sons, Ltd., Agents, The Tata Iron and Steel Co., Ltd., to the Secretary, Government of India, Finance Department, Simla.

Sir,

As Agents of the Tata Iron and Steel Company, Limited, we have the honour to apply for a license under Clause 3, Sub-clause (1) of the Indian Companies Restriction Act, XII of 1918, to enable the Company to increase the capital of the Company by the issue of 700,000 Cumulative Preference Shares of the nominal value of Rs. 100 each, aggregating Rs. 7 crores and bearing interest at the rate of 7½ per cent. per annum.

II. The original share capital of the Company was Rs. 2,31,75,000 divided into 200,000 Ordinary Shares of the nominal value of Rs. 75 each, 50,000 6 per cent. Cumulative Preference Shares of the nominal value of Rs. 150 each, and 22,500 Deferred Shares of the nominal value of Rs. 30 each.

II. By the special resolution passed on the 12th December 1916 and confirmed on the 11th January 1917 the original share capital of the Company was increased by Rs. 1,20,37,500 by the issue of 150,000 New Ordinary Shares at the rate of Rs. 75 per share and 28,250 New Deferred Shares at the rate of Rs. 400 per share (of which Rs. 30 was on account of the par value of the share and Rs. 370 on account of the premium of such share). These new shares were issued to the holders of the shares of the original capital in certain proportions and all the new Ordinary and Deferred shares were taken up by the shareholders in the original capital who paid on application and allotment on these new shares at the rate of Rs. 15 per each whole new Ordinary and Rs. 120 per each whole New Deferred Shares.

IV. The above increase of capital and the abovementioned payments on account of application and allotment were made before the passing of Act XII of 1918. Accordingly, when the Company required to make further calls on the abovementioned New Ordinary and Deferred Shares they applied to the Government for license as provided by the said Act, and Government were pleased to grant the license to the Company to make, during the currency of the said Act, the following Calls:—

(1) On 150,000 New Ordinary Shares of the Company:

- (*a*) A call of Rs. 15 per share to be payable not earlier than 15th August 1918;
- (*b*) A call of Rs. 15 per share to be payable not earlier than 15th February 1919;
- (*c*) A call of Rs. 15 per share to be payable not earlier than 15th August 1919.

(2) On 26,250 New Deferred Shares of the Company:

- (*a*) A call of Rs. 70 per share to be payable not earlier than 15th August 1918;
- (*b*) A call of Rs. 70 per share to be payable not earlier than 15th February 1919;
- (*c*) A call of Rs. 70 per share to be payable not earlier than 15th August 1919.

It will be observed that we do not ask for any license for the last call of Rs. 15 per share in respect of each new Ordinary Share and the last call of Rs. 70 per share in respect of each new Deferred Share.

The abovementioned increase of capital was required for extending the Works of the Company.

V. The Works of the Company are at present solely employed on Government orders especially in making rails for Government for use in Mesopotamia, Egypt and France. The whole output of the Company is thus taken up by Government at prices fixed by them. But it is believed that the demand of Government will be much greater than the Works of the Company as they at present stand, with the Extensions contemplated by the abovementioned increase of the capital, will be able to produce. The Company has been given to understand that Government would require further rails for 6,000 miles over and above their present requirements and a large quantity of munition shells.

VI. The Company has in view of the difficulties of importing during and after the War, the requirements of the country in respect of steel commodities, arranged with a number of English and Indian firms and Companies to establish Subsidiaries Industries at Sakchi for the manufacture of such commodities, the steel required for these industries being supplied by the Company. Arrangements have already been made with the following firms and Companies for the establishment of the following industries:—

1. The Enamelled Iron Ware, Ltd. (Messrs. Kilburn & Co.).
2. The Burma Oil Company, Tin Plate.
3. The Burma Zinc Company, Sulphuric Acid and Zinc.
4. Messrs. Low & Co., Jute Mill Machinery.
5. Messrs. Stewarts and Lloyds, Tube Mill.
6. The Eastern Chemical Company, Chemicals.
7. Messrs. McLeod & Co., Tea Machinery and Agricultural Implements.
8. Messrs. Jessop & Co., Structural Work.

In addition to the above, we are in treaty with the following people, negotiations not yet having reached the stage of a draft definite contract:—

1. Messrs. Braithwaite & Co., General Engineering.
2. Messrs. The British Thomson Houston, Electrical Machinery.
3. Messrs. Martin & Co., Manufacture of Wagons.
4. Messrs. Lang & Co., Machine Tool Company.
5. Messrs. J. F. Low & Co., Co-operative Foundry.
6. The Hon'ble Mr. Lalubhai Samaldas and others, Galvanised buckets, etc.
7. Messrs. Walchand Capadia & Co., Steel Shelving.

In order to enable the Company to locate these subsidiaries at Sakchi and for other purposes of the Company Government has been pleased to acquire for the Company 11½ square miles of land at Sakchi.

VII. At the time when the abovementioned increase of nominal capital to the extent of Rs. 1,20,37,500 was sanctioned by the Shareholders, having regard to the then demands of Government, the high price of manufacturing plant and machinery in England and America, the impossibility of obtaining such plant and machinery without the intervention of Government and the high price of freight, the Extensions were confined to the narrowest limit and a large number of plant and machinery, for which estimates were prepared, were omitted.

VIII. The position now is this: Government demands will be greater than before and more steel will have to be provided for the subsidiaries requiring larger output than before, the Company is advised that it will be necessary to place orders for the items of plant and machinery which were omitted as aforesaid. For the purpose of producing more steel it is also necessary to purchase Collieries and other raw material properties. Further, the estimates have on account of War conditions, largely exceeded. The Company has also, with the object of encouraging subsidiary industries to be located at Sakchi, agreed to subscribe towards their capital.

IX. As the plant and machinery could not be obtained from America and England without the intervention of Government a list of all the orders for such plant and machinery was placed before the Government who have been pleased to obtain from the Secretary of State for India in Council priority certificates for the same as War measures.

X. For all the above purposes the Company finds it necessary to raise a further capital of Rs. 7 crores by the issue of 700,000 Cumulative Preference Shares of the nominal value of Rs. 100 each bearing interest at the rate of 7½ per cent. per annum. The whole of this capital will be devoted to the Extensions of the Works of the Company, as indicated above. The Extensions of the Works of the Company will include all the works necessary for the welfare of labour such as Schools, Hospital, Agricultural Farms, Dairy Farms, Co-operative Societies, Libraries, Gymkhanas, Technical Schools and all other institutions solely devoted for the benefit of labour.

XI. The Company has been advised that before an application is made to the Shareholders for their sanction for the increase of this capital it is necessary that an application be made to Government for license under the above Act to enable the Company to take steps for such increase.

XII. Under the circumstances, we have the honour to apply for license under Clause 3, Sub-clause (1) of the Indian Companies Restriction Act of 1918, to enable the Company to increase the capital of the Company by the issue of 700,000 Cumulative Preference Shares of the nominal value of Rs. 100 each aggregating to Rs. 7 crores and bearing interest at the rate of 7½ per cent. per annum. It is not intended to call up the whole capital of Rs. 7 crores at once. A sum of Rs. 10 per share is to be made payable now and no further calls are to be made till April 1920 when calls of Rs. 15 per share will be made at intervals of not less than four months.

A copy of this letter is forwarded to the Accountant General, Bombay.

We have the honour to be,
Sir,
Your most obedient servants,
For and on behalf of
The Tata Iron & Steel Co., Ltd.,
Tata Sons, Ltd., Agents.
R. D. TATA,
Director.

Bombay, 19th/20th September 1923.

No. G.-1910/18.

Copy forwarded to the Accountant General, Bombay, for information.

For and on behalf of
The Tata Iron & Steel Co., Ltd.,
Tata Sons, Ltd., Agents.
R. D. TATA,
Director.

सत्यमेव जयते

Bombay, 19th/20th September 1918.

No. G.-1911/18.

Copy forwarded to the Controller of Currency, Calcutta, for information.

For and on behalf of
The Tata Iron & Steel Co., Ltd.,
Tata Sons, Ltd., Agents.
R. D. TATA,
Director.

STATEMENT (*e*).

License under the Indian Companies Restriction Act, 1918 (XII of 1918).

In pursuance of the Indian Companies Restriction Act, 1918, the Governor General in Council is pleased to permit the Tata Iron and Steel Company, Limited, further to increase the authorised and paid-up capital of the Company, during the currency of the said Act, by a sum not exceeding seven crores of rupees by the creation and issue of 700,000 new 7½ per cent.

Cumulative Preference shares of the nominal value of Rs. 100 each, on the following conditions, namely:—

(1) That the total sum made payable on application and allotment of the new shares shall not exceed Rs. 10 per share.

(2) That no further call shall be made on the new shares until April 1920, and that calls thereafter shall not exceed Rs. 15 per share, with an interval of not less than four months between successive calls.

(3) That any portion of the funds thus raised which cannot at once be applied to the purposes of the said Company shall in the meantime be invested in Government securities.

M. M. GUBBAY,
Offg. Secretary to the Government of India,
Finance Department.

Simla, the 21st October 1918.

$\frac{\text{I}}{\text{We}}$ accept the above conditions and in consideration of the issue of the license referred to, $\frac{\text{I}}{\text{we}}$ undertake to see that they are duly observed.

For and on behalf of
The Tata Iron & Steel Co., Ltd.,
Tata Sons, Ltd., Agents.

R. D. TATA,
Director.

STATEMENT (*f*).

Tata Limited, London. 4th June 1917.

DEAR SIR WILLIAM,

With reference to our conversation on Friday, Mr. Perin suggests that something after the manner of the following should be sent in a cable by the Foreign Office:—

> "Tata Steel Works India Extension material amounting to 15,000 tons will be offered in approximately equal amounts during course of next 12 months. British Government request your assistance forwarding this material employment of which means much needed increase steel production national purposes."

Thanking you for all you have done in this matter.

Yours sincerely,
H. TREBLE.

Sir William Bull, M.P.

STATEMENT (*g*).

Word Code. (Copy) Confidential.

GOVERNMENT OF INDIA.

INDIAN MUNITIONS BOARD.

GENERAL.

Telegram No. G.-3, dated Simla, the 21st August 1918.

From—Viceroy (Indian Munitions Board), Simla,

To—Secretary of State for India, London.

G.-3. Please refer correspondence ending your telegram, dated 5th April, Tatas' Plate Rolling Mill. Tatas state no possibility obtaining further

United States of America priorities without Government support. We now strongly recommend reconsideration of policy and grant of facilities for obtaining plant immediately on following grounds. Whole extension necessary for Indian Steel supply including plates. In consequence of arrangements explained in our telegram, dated 13th December 1917, G.-3, Tatas have already expended Rs. 35 lakhs in preparation for extensions which preparations now lying unproductive and have committed themselves by rupees one hundred lakhs in America besides preparatory expenditure here. Some material already arrived, some *en route*, remainder in forward state of manufacture. In consequence of preparations production of plates will be secured here as early as elsewhere. Supply of plates essential as local stocks nearly depleted and importation results in losses at sea and extra demands at home. In consequence of war urgency Tatas have contracted to pay high rates for plant which would not be justified except to get immediate delivery. Independent new source of cheap raw material commend scheme as important Imperial asset beyond advantages already considered. Plant still required is enumerated in our telegram, dated 21st August G.-3. We suggest you recommend American Government to release material as urgent war measure.

R. L. MASON,
for *Secretary*,
Indian Munitions Board.

No. G.-3.

Copy forwarded to C. P. Perin, Esq., Cecil Hotel, Simla, for information.

By Order,

R. L. MASON,
Controller,
(*Home Indents and Priority*),
Indian Munitions Board.

सत्यमेव जयते

(Copy)

Word Code.

GOVERNMENT OF INDIA.

INDIAN MUNITIONS BOARD.

(GENERAL.)

Telegram No. G.-3, dated Simla, the 21st August 1918.

From—Viceroy (Indian Munitions Board), Simla,
To—Secretary of State for India, London.

G.-3. Reference our telegram, dated 21st August, Tatas' Plate Mill, following outstanding orders require priority.

A.-101, A.-102 December 8th, 1916, for minor items not despatched already, A.-153, 21st February 1917, A.-154, 14th March 1917, with B. Pollock of Youngstown, Ohio.

A.-512, A.-513, 6th December 1917, with Otis Elevator Company, New York.

A.-573, March 1918, A.-570 to A.-572, 9th April 1918, with Pittsburgh Valve Foundry and Construction Company, Pittsburgh.

A.-590, 8th May 1918, A.-272, 6th July 1917, A.-526, 17th January 1918, A.-500, A.-501, 12th December 1917, A.-602, 27th May 1918, A.-525, 15th

March 1918, A.-108 to A.-111, 17th February 1917, A.-246, 20th June 1917, A.-164, 17th July 1917, A.-232, 14th December 1917, A.-466, 24th August 1917, A.-351, A.-353, A.-354, 28th August 1917, A.-511, 28th September 1917, A.-506, 31st December last, A.-518, 27th September 1917, A.-569, 9th April 1918, and one switchboard with General Electric Company, New York.

A.-127, March 1917, A.-125, A.-126, March 1918, with Pennsylvania Engineering Works, Youngstown, Ohio.

A.-474, 3rd January 1918, A.-477, 4th March 1918, and two charging machines with Alliance Machine Company, Alliance, Ohio.

A.-107, 26th May 1917, A.-524, 17th January 1918, with United Engineering and Foundry Company, Pittsburgh.

A.-314, A.-315, 1st August 1917, with Southwark Foundry and Machine Company, Philadelphia.

A.-552, 28th February 1918, with Wilson-Snyder Manufacturing Company, Pittsburgh.

A.-118, A.-119, A.-112, 23rd July 1917, with Wheeler Manufacturing Company, Philadelphia.

A.-505, 3rd December 1917, with B. F. Sturtevant Company, New York.

A.-377, 3rd October 1917, with Platt Iron Works, Dayton, Ohio.

Six boilers similar to those ordered A.-113, 16th March 1917, with Wickes Boiler Company, New York, Perin and Marshall, New York, will communicate with American Priority Authorities.

R. L. MASON,
for *Secretary*,
Indian Munitions Board.

No. G.-3.

Copy forwarded to C. P. Perin, Esq., Cecil Hotel, Simla, for information.

By Order,
R. L. MASON,
Controller,
(Home Indents and Priority),
Indian Munitions Board.

सत्यमेव जयते

STATEMENT (*h*).

Copy of letter No. G.-2102, dated 14th September 1917, from Tata Sons and Company, Agents, The Tata Iron and Steel Co., Ltd., to Sir Thomas Holland, K.C.I.E., F.R.S., President, Munitions Board, Simla.

Dear Sir,

In accordance with the wish expressed by you at the close of the conversation you had with our Board of Directors yesterday, we have pleasure in submitting below the proposals which were made at the time:—

(1) *Re the Plate Mill.*—On the basis of Mr. Perin's printed Report of estimates for the Extensions made in May 1916, it was intended to instal a Plate Mill 90″ × 34″ to produce plates from ⅛″ to 1¼″ in thickness; in widths up to 84″ and varying lengths up to 50 ft., both length and width being dependent upon the thickness. The capacity of this Mill, if operated for 24 hours with three shifts, was estimated to be 250 tons per day, but our original intention was to work the Mill only 8 hours per day of 24 hours with only *one shift* which means bringing out a crew of only 7 men. Our idea in doing this was that we realized that we might have serious trouble with the plant and the crew in the beginning and also in making suitable steel for Plates; but, if Government requirements cannot be met by working

one shift only as above indicated, we see no difficulty in operating the plant for 16 hours out of the 24 provided the additional crew is obtainable. You will readily understand that we have to have this size of Mill in order to make plates of the dimensions specified above. The cost of such a Mill was estimated by Mr. Perin to be Rs. 14,22,174, made up as follows:—

		Rs.
Materials to be purchased abroad		7,81,014
Ocean freight		96,360
	Rs.	
Iron and steel castings and Railway materials to be manufactured at Sakchi.	67,005 40,000 2,53,750	
		3,60,755
For materials and labour in India		1,84,045
		14,22,174

The above estimate was, as already stated, made in May 1916. From these details you will see that our original intention was to manufacture a part of the Mill at Sakchi. Believing that the Mill might be considered a War measure in which case time would be the main factor Mr. Tata, as stated to you in Simla, had cabled to our London Office in April 1917, enquiring what a complete Plate Mill of the above description, if purchased abroad, would cost and the reply we then received was that the total cost of the Mill ready for operation at Sakchi would be Rs. 30 lakhs. Prices have changed since then, and we are cabling to our representatives asking them to give us an idea of the approximate cost of the Mill to-day, and we shall inform you by wire as soon as we receive a reply. The proposal made by our Board was that our Company would instal the Plate Mill, if Government would agree to pay the extra cost over the Rs. 14,22,174 originally estimated in the Report of May 1916.

As regards the price of plates, the proposal made to you by our Board was that during the period of the War the price to be paid for Plates will be the present Government average price for rails *minus* the cost of conversion from ingot to rail *plus* the cost of conversion from ingot to plate.

(2) *Re the Open Hearth Tilting Furnace.*—You intimated to our Board that the installation of the Plate Mill by itself would be of no advantage to Government as our entire steel output at present is required for meeting Government needs for rails and accessories necessary for military and strategic purposes. Unless, therefore, provision was made for increasing the output of steel to be rolled into plates on the Plate Mill now proposed, a diversion of steel from rails to plates in itself was not desirable from the Government's point of view. You, therefore, suggested that we should increase our steel capacity also. We informed you that, according to the programme of Extensions of May 1916, it was intended to put up a Duplex Open Hearth Tilting Furnace estimated to cost Rs. 32,61,913. This estimate includes vessels, blowers, cranes, and other accessories. It was proposed to you that our Company would be prepared to put up the Tilting Furnace also and the necessary equipment for operation as an urgent war measure. As, however, the cost of the Tilting Furnace and the necessary equipment, if installed immediately, would be higher than originally estimated, the Board proposed that our Company and Government should share half and half any excess of cost over the Rs. 32,61,913 which would be necessary to instal the plant as an urgent war measure. Our reason for thinking that it is not unfair to ask Government to share half the extra cost in this connection is that to operate the Tilting Furnace it will be necessary for us to build additional Coke Ovens and an additional Blast Furnace, all of which would

be done at our own cost and will involve a large expenditure on our part. As in the case of the Plate Mill and the Tilting Furnace, extra cost will be involved on these also, the whole of which will have to be borne by us. We have cabled, asking for the present quotation for a Tilting Furnace, but have so far not received a reply. As soon as we receive it, we shall intimate to you the exact figure at which it is quoted now against the Rs. 32,61,913 inserted in the Report of May 1916.

We now leave it to your good self to place these proposals before Government, as was kindly agreed by you; and in doing so we feel confident that they will be considered reasonable and will be accepted by Government.

We are, Dear Sir,
Yours faithfully,

TATA SONS & CO.,
Agents.

R. D. TATA.

STATEMENT (i).

Copy of cable from Messrs. Tata, Limited, London, dated 5th September 1917.

सत्यमेव जयते

Ironco	
Bombay	
FIFTYSEVEN	No. 57.
UGGCE MUNYX	Referring to your telegram.
LIAZY UZUMY	O 74, understand.
AFOWN BIYRY	Admiralty cabling.
UMYMO	to-day.
MUNITIONS	Munitions.
BOARD	Board.
OWSUKODTIF	regard Plate.
KEJAHAPUFK	Mill as.
VOYPA KAJDE	War measure.

TATA.

Copy of cable, dated the 10th September 1917, received from Messrs. Tata Limited, London, on 12th September 1917 re Plate Mill.

Ironco.

Bombay.

No. 59. Referring to our telegrams 57, 58, informed Admiralty cabled following to Indian Munitions Board, 6th September:—

> "Admiralty understand from Tatas that you wish for a ruling of Home Government as to whether Plate Mill to be completed in about two years can be regarded as War measure. Admiralty ruling is in the affirmative and they ask that you will do everything possible to facilitate completion."

TATA.

STATEMENT (*j*).

GOVERNMENT OF INDIA.

INDIAN MUNITIONS BOARD.

No. G.-3, dated Delhi, the 11th of January 1918.

From—The Secretary, Indian Munitions Board,
To—Messrs. Tata Sons & Company, Agents, the Tata Iron and Steel Company, Limited, Bombay.

DEAR SIRS,

Referring to the correspondence ending with your letter No. G.-2780/17, dated the 22nd December 1917, I am directed to inform you that a communication has been received from the Secretary of State for India who has intimated his approval of the terms provisionally arranged with you in connection with the extensions of the Tata Iron and Steel Works. I am directed, therefore, to communicate the formal confirmation by the Government of these terms which, for convenience of reference, are summarised as follows:—

The Tata Iron and Steel Company to do all in their power to expedite the construction of the steel plate mill, duplex open hearth tilting furnace, and all connected subsidiary works; and in consideration of the Company's doing this without any direct financial assistance the Government undertakes—

(*a*) to give facilities for obtaining and importing machinery and the necessary skilled labour;

(*b*) to guarantee a market for 10,000 tons of plates per annum for ten years, at Calcutta c.i.f. prices for similar imported plates, provided that plates are to be made within two years from the date of confirmation of this arrangement namely the date of this letter, or alternatively, provided 10,000 tons of plates be delivered to Government within three years of this date, and thereafter annually;

(*c*) to do all that it can, if necessary by the application of the Defence of India rules to make available for use in the Tata Iron and Steel Works as much steel and wrought iron scrap as can be secured to help to increase the output of steel for war requirements.

With reference to clause (*b*) above it is understood that while, on the one hand, Government guarantees to take the quantity of plates mentioned, the Company, on the other hand, undertakes to supply this quantity in priority to other indents.

2. With regard to the question of assuring priority for the supply of plant, the Secretary of State, observing that the bulk of the orders are placed in the United States, says that progress is reported to be satisfactory, and that the authorities in the United States are being asked to give facilities for the completion and shipment of plant, so far as is compatible with direct and urgent war demands.

Yours faithfully,

J. RYAN,
Secretary, Indian Munitions Board.

STATEMENT (*k*).

(Copy)

GOVERNMENT OF INDIA.

INDIAN MUNITIONS BOARD.

No. G.-3, dated Delhi, the 13th February 1918.

From—The Secretary, Indian Munitions Board,
To—Messrs. Tata Sons & Co., Agents, the Tata Iron and Steel Co., Ltd., Bombay.

DEAR SIRS,

I am directed to inform you that the Secretary of State for India has intimated that release of the 5,000 K. W. Turbo Generator, which has been the subject of correspondence with you in connection with the Extension of the Sakchi Works, has been secured. A further telegram has been sent to the Secretary of State recommending the release if possible of the 16 foot vertical boring mill, which has been reported as having been commandeered, in Mr. Perin's telegram to Sir Thomas Holland, No. C. P. P. 220, dated the 7th February. The result of this reference is still awaited.

Yours faithfully,
J. RYAN,
Secretary, Indian Munitions Board.

STATEMENT (*l*).

(Copy)

Copy of letter from Mr. S. M. Marshall, No. 9929, dated New York, May 18th, 1918, to Mr. C. P. Perin, Sakchi.

Shipping Situation.

DEAR MR. PERIN,

You will have seen from copies of several cables exchanged between ourselves and London that we have been through many difficulties in securing shipping space for our extensions freight to India. Originally there were only two boats scheduled for Calcutta during the month of May: The "City of Bristol" and the "City of Delhi." On these there was first of all allocated to us 500 tons and 200 tons respectively. We appealed to the British Ministry of Shipping here and through their assistance we were given 200 tons more on the "City of Delhi," making 900 altogether, and we expected 3,000 tons.

We cabled Mr. Tuckwell asking his assistance, and he prevailed upon the London Office of the British Ministry of Shipping to give us 1,600 tons on the S.S. "War Trefoil," a tramp steamer which was primarily scheduled for Alexandria, and then was given orders to make Karachi, but not Bombay or Calcutta. Mr. Padshah authorised our shipping this amount of space to Karachi even though it meant a long railroad freight haul to reach the Works.

This information about the "War Trefoil" also came to us from the Ministry of Shipping here, but they were very uncertain as to exactly what port she would sail to.

Then another steamer—the S.S. "City of Rangoon"—was scheduled for Calcutta on the regular service of the Ellerman-Bucknall Line, and we were given 1,800 tons on her. We got in touch at once with the Ministry of Shipping here and explained the situation to them, our freight contract at a $50 base and the probability of all our requirements being met on this contract.

The Ministry of Shipping then informed us that there was a possibility of the "War Trefoil" going to Calcutta. Nevertheless they could quote us no rate, nor could they give us any definite information about her. The matter was then dropped as far as this boat was concerned, and we completed our arrangements for the "City of Rangoon."

We have a cable this morning from Mr. Tuckwell, his No. 133, copy of which is enclosed, stating that the "War Trefoil" was going to Calcutta, and that he considered it impolitic not to accept the Ministry's reservations on her.

We learned the day before yesterday, however, from the Ministry here, that they would not give us any space on her, that she was all taken up with Government cargo. As our dealings with the Ministry here have been conducted with the greatest of frankness and goodwill on both sides, we feel entirely confident that there is no chance of any recrimination on their part, and are so cabling and writing Mr. Tuckwell.

We have felt all along that if they could give us space on the "Trefoil" it might be wisest to take some, even at a $10 increase in rate, just because Mr. Tuckwell had gone to all the trouble of making representations to the London Office, but as they have finally refused us any space at all, we are satisfied that the situation is clear.

We have altogether, approximately 600 tons on the "City of Bristol" now loaded and ready to depart; 1,800 tons on the "City of Rangoon" due to sail about the 28th, and 400 tons on the "City of Delhi" sailing about the 4th or 5th of June. This nearly takes care of all our shipments for this month, and is very much better than we had originally feared.

We have no news of the boats scheduled for June, but Mr. Tuckwell has asked for our approximate shipping schedule for the coming six months, and we believe that he is making representations to the London Office of the Ministry of Shipping, and hopes to arrange that we be taken care of.

On the whole, we are more optimistic as to the shipping situation now than we were three weeks ago.

Yours very truly,

S. M. MARSHALL.

STATEMENT (*m*).

(Copy)

Simla, 21st August 1918.

Dear Sir Thomas,

I am taking the liberty of giving a letter of introduction to Mr. C. P. Perin, Consulting Engineer of the Tata Iron and Steel Works. You are fully informed regarding the nature of this enterprise, and the way in which it has helped to save the war situation out here. In thousands of ways in India itself the Works have met our demand for various forms of steel, while practically all the railways in Mesopotamia and the line from Egypt to Palestine are constructed of Tata steel. The Works are among the best that I am acquainted with, not only from the purely technical point of view, but in consequence of the extraordinary provision that has been made for the health and even education of the workers.

2. By far the largest share of credit is due to Mr. Perin. He organised the original scheme, saved the situation in 1913, when the Directors had nearly given up hope, and has generally throughout been the real soul of the enterprise.

3. You are aware of the various extensions that are now being planned, and of the accessory industries which will be undertaken immediately war conditions permit of obtaining the necessary plant and men. Some of the proposed extensions can be regarded without hesitation as war measures, especially the proposal to undertake plate rolling. We are desperately hard up for steel plates, not only for barge building, but also for the more important work of ship-repairing: serious delays have occurred in repairing ships, and, consequently, tonnage has often been out of action unnecessarily.

4. The extensions necessary for plate rolling require an increased production of steel and other increases in the contributory processes, which will reduce our demands for materials from Home. Our reasons for supporting the proposal to extend the Works immediately have been cabled Home. Apart from the fact that we consider that the extensions will help us to reduce our demands at a time when every man and machine is wanted for direct war work at home, and that the extensions are thus absolutely necessary in the interests of the war, we feel we have no latent misgivings in supporting the proposal, as the Company, in spite of its local monopoly of steel, has placed its full output at the disposal of Government, at prices that roughly correspond to the control prices in the United Kingdom, and has now undertaken the capital expenditure necessitated by these extensions, at a time when they know that they will be compelled to pay abnormal prices for the machinery required.

5. In consequence of the fact that last year when at Home, Mr. Perin was definitely warned off any attempt to obtain the necessary plant in England, he was compelled to place orders in America, but American restrictions on export now resemble our own, and Mr. Perin proposes, therefore, to distribute the orders so as to utilise any local and temporary facility for obtaining plant in England as well as in America. In this task he will consult appropriate authorities at the Ministry of Munitions, and it would smooth his way if it were known generally that he has the approval of the India Office.

6. We have no hesitation here in recommending him to your favour, not only because of the object of his mission, but on personal grounds: his wide knowledge of the world, and general culture, will, I am sure, greatly appeal to your fancy. Possibly also the Secretary of State may like to get his views on Indian questions, as he has the unusual advantage of being an American who has, for the past 14 years, successfully worked with, and through, a purely Indian Board of Directors in an undertaking which, before his advent, was never successful.

Yours sincerely,

T. H. HOLLAND.

Sir T. W. Holderness, G.C.B., K.C.S.I.,
Under Secretary of State for India,
India Office, London, S.W.

Subsequent letter No. (4).

No. G. 1280, dated 5th November 1923.

From—Messrs. TATA SONS LTD., Agents, The Tata Iron and Steel Co., Ltd., Bombay,

To—The Secretary, Tariff Board, 1, Council House Street, Calcutta.

While at Jamshedpur the Tariff Board desired us to prepare and forward statements showing the actual costs of production during certain years and also costs of production including 10 per cent. profit to the Company. We are, therefore, submitting herewith, together with a note explaining the figures, three copies of the under-mentioned statements:—

(1) Statement showing cost for 1915-16, 1921-22, and after Greater Extensions with 10 per cent. profit on the Block Account less depreciation;

(2) Statement showing cost for 1915-16, 1921-22, and after Greater Extensions with 10 per cent. Dividend on Ordinary Capital including Deferred Capital.

(3) Statement showing cost of finished steel for 1915-16, 1921-22, and after Greater Extensions, after crediting all the proceeds on account of pig and by-products. (This is according to the method proposed by Mr. Ginwala.)

I understand that the Tariff Board desires us to make an attempt to ascertain the cost allowing for profit at which steel can be manufactured in this country in, say, the next five years, and to relate such estimates as far as possible to our own experience in the past and our own plans for the future. The following note is an attempt to ascertain the cost of the manufacture of steel per ton in 1915-16, 1921-22, based on actual figures taken from our accounts and also the probable cost of manufacture in the future based partly on actual figures and partly on estimates. The estimate assumes 10 per cent. for profit.

There are three ways of ascertaining this cost:—

सत्यमेव जयते

I.

By taking (*a*) depreciation on the actual cost of the plant in operation. This must be a fixed permanent figure on the original cost of the plant. If depreciation is taken on the plant as written down by depreciation from year to year, the life of the plant is extended. I have taken the actual figure allowed by the Authorities of Income-tax for the purpose of this calculation;

(*b*) interest on such plant, after deducting depreciation already written off, at 10 per cent. as a fair rate of profit;

(*c*) interest on the actual working capital at the rate of interest which has to be paid thereon. The total figure is then allocated between the different products and the result added to the Works cost will give the cost per ton in the case of these products.

II.

On capital actually invested. By this method

(*a*) depreciation as in Statement I;

(*b*) interest is taken on the working capital as actually paid;

(*c*) interest on Debentures,

(*d*) Dividend on First and Second Preference Shares;

(e) profit on ordinary capital at 10 per cent. In ordinary capital is included all Deferred shares. The figure so obtained, allocated between the various products and added to the Works cost will give the cost per ton.

In this case the allocation will be precisely the same as in the first method and will be explained presently.

III.

Taking the Works expenditure as representing the actual manufacturing cost, and depreciation, interest and dividends as above we get a total figure which represents the total cost to the Company. If we deduct from this all credits on account of pig iron, coal tar and Sulphate of Ammonia, the resulting figure will roughly represent the cost of steel and, divided by the tonnage, will give the cost per ton. This is the method suggested by Mr. Ginwala.

There are certain figures that are common to all these methods. The figures of production for the years 1915-16 and 1921-22 and the realizations are actuals. The figures of production for the period after the Greater Extensions are our estimates of the full total production when the Works are in full operation. These may also be regarded as actuals.

The figures for the block and the figures for the working capital are also actuals as are the figures for capital. There remain certain figures which are estimates and can only in the nature of the problem be estimates. We have considered these very carefully and we think the estimates approximately correct. I give our reasons for them:—

(a) *Working costs after completion of the Greater Extensions.*—The figures given are our estimate of the reduced cost which should result from the increased production and efficiency of the new plant. We think these figures will prove correct over a period of five to ten years, though they will not be realized in the first two or three years.

(b) *Selling prices estimated after completion of the Greater Extensions.*—These prices are based partly on existing prices but mainly on the level of value which we expect money to reach as a standard after the war. We expect a permanent increase in prices or a permanent decrease in the value of money about 33⅓ per cent. Before the war the price of steel rails in England was £6 or at 1*s.* 4*d.* Rs. 90. When conditions stabilise we should expect it therefore to be Rs. 120. Adding to this £1-6-6 freight or at 1*s.* 4*d.* Rs. 19-14-0, handling charges Rs. 2-8-0 and without duty the actual final price in this country will be Rs. 142-6-0. With 10 per cent. duty this=Rs. 157. The figure of Rs. 160 which we have estimated as the price of steel is, however, only used to ascertain the percentage according to which the expenditure over Works Costs and the profit should be allocated between the different products.

(c) The only other point on which an estimate has been made is the allocation of the entire expenditure under depreciation, interest on working capital and profit between the four various selling products mentioned in the statement. This has been done as follows:—

The total amount realised by the sale of each product has been reduced to a percentage of the total amount realized by sales. In allocating that percentage of the total figure has been allotted to the cost of each product and divided by the tonnage gives the proportion of the overhead charge to be borne by it. The expenses of the management, which include the Bombay Office expenses and the Managing Agents' commission, have been shown separately.

Briefly stated, the results of this analysis are as follows:—

COST OF STEEL.

	1915-16.	1921-22.	After Greater Extensions are completed.
	Rs.	Rs.	Rs.
First method . .	128·79	182·87	196·41
Second method . .	128·74	198·32	187·48
Third method . .	120·75	197·66	187·06

The result of these three analyses would seem to show that a fairly reasonable figure to take would be Rs. 190—200 per ton. It must, however, be realised that that result will not be attained immediately on the operation of the new plant and that English steel have in the past years been imported at prices lower than this estimate. We know of rails bought at Rs. 132 per ton last year landed in India.

(*Ild.*) J. C. K. P.

सत्यमेव जयते

A. The finished product is the raw material of all industries and is essential to them.

Q. 59. Does the industry use as its raw material the finished product of any other industry which is established or is likely to be established in India?

A. Yes. In our furnaces we use refractory bricks produced by the plants of Messrs. Burn & Co., Andrew Yule & Co., and the Kumardhubi Fireclay and Silica Works. The manufactures of firebricks, silica and magnesite bricks were very greatly developed during the war and this industry to a large extent depends on the maintenance of steel and iron works in India.

Q. 60. Would you prefer a system under which all industries would receive a more or less uniform protection, or one under which industries receive varying amounts of protection in accordance with their needs?

A. We ask for the protection of this one vital key industry on which all others depend. We do not wish to express any opinion as to either the merits or otherwise of protection as opposed to free trade as a general system. But generally speaking, we are opposed to protection except for the definite purpose of encouraging new industries which the country needs, and we would only then favour it as a temporary measure.

Q. 78. Do you approve of the system of *ad valorem* customs duties or would you prefer that the duty should be specific, *i.e.*, a fixed charge for a given weight or measure? If you prefer the latter system, what are your views on the necessity of readjusting the duties from time to time?

A. We prefer *ad valorem* duties.

In respect to these the provisions of the existing Act are simple. Tariff valuations lose their meaning frequently and 10 per cent. duty can easily become a 20 per cent. duty if the tariff is wrong.

सत्यमेव जयते

The Tata Iron and Steel Co., Ltd.

Blooming Mill Cost with " All in."

—	July 1916 to June 1917.		July 1917 to June 1918.		July 1918 to March 1919.		April 1919 to March 1920.		April 1920 to March 1921.		April 1921 to March 1922.	
	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.	Per ton. Rs.	As.
Metal cost (Ingots)	62	8·38	67	4·57	85	5·77	87	0·80	95	15·35	101	14·42
Labour	1	5·37	1	3·35	1	1·80	1	2·84	1	8·86	1	11·52
Stores, tools supplies	1	8·66	1	5·25	2	8·44	1	10·73	1	12·42	1	6·40
Steam	0	12·77	0	15·20	1	3·59	1	2·77	1	9·00	2	0·00
Gas producer	0	12·84	0	11·14	0	14·15	0	13·09	1	1·64	1	4·80
Roll Account	0	4·00	0	3·81	0	2·69	0	3·47	0	4·00	0	4·00
Total service cost	0	13·55	0	12·65	1	2·96	1	1·98	1	4·11	1	4·69
Interest	0	4·48	0	5·76	0	12·50	0	13·80	1	5·34	1	6·46
Bombay expenses, Depreciation and Agents' Commission	2	7·36	2	2·72	2	4·10	2	14·26	2	13·33	2	9·68
TOTAL	70	13·41	75	0·45	95	8·00	96	15·74	107	10·05	113	13·92

Third Method.

	1915-16.	1921-22.	After Greater Extensions.
	Rs.	Rs.	Rs.
(1) Actual Manufacturing cost . . .	83,37,139	2,04,93,469	5,07,38,430
(2) Depreciation, interest, dividends, Bombay expenses and Agents' Commission (as in second method).	54,23,418	1,49,51,961	3,25,74,637
	1,38,60,557	3,54,45,430	8,33,13,067
(3) Less proceeds of pig iron, etc. . .	28,72,373	1,05,65,686	44,24,050
(4) Cost of steel.	1,09,88,184	2,48,79,744	7,88,89,017
(5) Cost per ton	120·75	197·66	187·06

सत्यमेव जयते

LIST OF STATEMENT.

Statement No. I.—Statement showing production in tons, number of covenanted and uncovenanted employees, the cost of labour and the unit cost of labour per ton.

Statement No. II.—Newspaper cutting.

Statement No. III.—Statement showing the capital of all the subsidiary Companies at Jamshedpur and the Tata Iron and Steel Company's share in the capital of the subsidiary Companies.

Statement No. IV.—Summary of terms of agreements with subsidiary Companies.

Statement No. V.—Statement showing names of Railways with whom the Company have long term contracts, the dates of commencement and expiry of the respective contracts and the estimated tonnage of annual delivery.

Statement No. VI.—Note showing how fall of prices owing to depreciated currency would, in the opinion of the Tata Iron and Steel Company, be counteracted.

Statement No. VII.—Statement showing current c.i.f. prices, and the Tata Iron and Steel Company's selling price and cost price.

Statement No. VIII.—Statement showing the pre-war c.i.f. prices and the Steel Company's selling prices.

Statement No. IX.—Note showing the yearly Capital and recurring expenditure incurred by the Tata Iron and Steel Company during the last two years on the Technical Institute and the grants received from the Local Governments and Indian States.

Statement No. X.—Statement showing the number of applications for admission to the Jamshedpur Technical Institute during the last two years, province by province, for November 1922.

Statement No. XI.—Note relating to compensating protection referred to in Mr. Peterson's evidence of the 23rd August 1923.

Statement No. XII.—Statement showing conversion cost.

Statement No. XIII.—Statement giving particulars of greater extension units in operation in August 1923.

Statement No. XIV.—Note on letter No. D. O. 135, from the Tariff Board, dated the 24th August, addressed to Mr. Peterson.

Statement No. XV.—Note on letter No. D. O. 135, from the Tariff Board, dated the 24th August, addressed to Mr. Peterson.

Statement No. XVI.—Capital expenditure on greater extensions in operation up to 31st March 1922.

Statement No. XVII.—Customs duties.

Statement No. XVIII.—Statement showing the amount paid by the Tata Iron and Steel Company for Railway freight, Customs duty, etc., during the year ending 31st March 1923.

Statement No. XIX.—Depreciation as allowed by Income-tax office. General block as at 31st March 1923.

Statement No. XX.—Statement showing Works cost per ton of steel from 1912-13 to 1922-23.

Statement No. XXI.—Statement showing Price, Royalty paid for the collieries and the amount expended on Machinery and Equipment of the same up to 31st March 1922.

Statement No. XXII.—Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd., for sale of pig iron.

Statement No. XXIII.—Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd., for sale of rails.

Statement No. XXIV.—Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd., for purchase of coal.

Statement No. XXV.—Statements of contracts for five years and over for purchase of raw materials.

Statement No. XXVI.—Statement showing the tonnage for Operation Department handled by the Bengal Nagpur Railway under freight agreement with them.

Statement No. XXVII.—Statement showing average f.o.b. prices of Cleveland Pig Iron No. 3 as on the 1st day of each month for the years 1912-13, 1913-14, 1920-21 to 1922-23.

Statement No. XXVIII.—Statement showing the average selling price per ton of Pig Iron realised by the Tata Iron and Steel Company for Ordinary Sale and Contract Sale separately for the years 1912-13, 1913-14 and 1919-20 to 1922-23.

Statement No. XXIX.—Statement showing the average selling price per ton of Big and Bar Mill materials realised by the Tata Iron and Steel Company during the years 1912-13 and 1913-14.

Statement No. XXX.—Statement showing the c.i.f. quotations on various dates in 1919 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Statement No. XXXI.—Statement showing the c.i.f. quotations on various dates in 1920 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Statement No. XXXII.—Statement showing the c.i.f. quotations on various dates in 1921 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Statement No. XXXIII.—Statement showing the c.i.f. quotations on various dates in 1922 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Statement No. XXXIV.—Statement showing the c.i.f. quotations on various dates in 1923 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Statement No. XXXV.—Statement showing the total cost in the year 1921-22 of coking and other coal landed at works in Jamshedpur and the cost for labour employed at Jamshedpur other than labour in the Town Department or on the Greater Extensions.

Statement No. XXXVI.—Statement showing the average prices of coal paid by the Tata Iron and Steel Co., f. o. r. colliery per ton for the years 1912-13, 1913-14 and 1919-20 to 1922-23.

Statement No. XXXVII.—Statement showing the average selling price per ton of Big mill materials under contract by ordinary sale for the years 1919-20 to 1922-23.

Statement No. XXXVIII.—Statement showing the average selling price per ton of Bar Mill materials under contract and by ordinary sale for the years 1919-20 to 1922-23.

Statement No. XXXIX.—Statement showing particulars regarding collieries.

Statement No. XL.—Statement showing Royalty payable on the various collieries.

Statement No. XLI.—Statement showing the value (*i.e.*, the actual cost for machinery, etc.) of the machinery and plant at the colliery at the end of each financial year from 1912-13 to 1922-23.

Statement No. XLII.—Statement showing estimated raising cost per ton after development of collieries.

Statement No. XLIII.—Statement showing estimated monthly outturn after development of collieries and the estimated additional capital expenditure (after 31st March 1923) necessary to secure that output.

Statement No. XLIV.—Statement showing the actual average cost per ton of raising coal excluding overhead charges.

Statement No. XLV.—Statement showing the consumption of coal in the works at Jamshedpur from 1916-17 to 1922-23.

Statement No. XLVI.—Statement showing the estimated requirements of coal by the Tata Iron and Steel Company for each year up to the time when the Greater Extensions are in full operation.

Statement No. XLVII.—Statement showing the total quantity of coal purchased in each year from outside collieries under contract and the average price per ton f.o.r. colliery, for the years 1916-17 to 1922-23.

Statement No. XLVIII.—Statement showing the quantities of coal actually sold by the Tata Iron and Steel Company from their own collieries to the outside customers and the prices realised, from 1st January 1917 to 31st March 1923.

Statement No. XLIX.—Statements showing the expenditure on the Greater Extensions at the end of each year from 1916-17 to 1922-23.

Statement No. L.—Letter from the Tata Iron and Steel Co., Ltd., dated 8th January 1924, explaining certain items of expenditures for 'Blooming mill,' 28″-mill, etc.

Statement No. LI.—Statement showing labour force, production, etc. for years 1915-16 and 1921-22.

Statement No. LII.—Estimated cost of production of coke when Greater Extensions are completed and are working.

Statement No. LIII.—Estimated cost of production of Sulphuric Acid when Greater Extensions are completed and are working.

Statement No. LIV.—Estimated cost of production of Sulphate of Ammonia when Greater Extensions are completed and are working.

Statement No. LV.—Estimated cost of production of Coal Tar when Greater Extensions are completed and are working.

Statement No. LVI.—Estimated cost of production of Pig Iron when Greater Extensions are completed and are working.

Statement No. LVII.—Estimated cost of production of Steel Ingots when Greater Extensions are completed and are working.

Statement No. LVIII.—Estimated cost of production of New and Old Blooming Mill when Greater Extensions are completed and are working.

Statement No. LIX.—Estimated cost of production of New and Old 28″ Rail Mills when Greater Extensions are completed and are working.

Statement No. LX.—Estimated cost of production of 24″ and 18″ Mills when Greater Extensions are completed and are working.

Statement No. LXI.—Estimated cost of production of New Merchant Mill and Old Bar Mill when Greater Extensions are completed and are working.

Statement No. LXII.—Estimated cost of production of Plate Mill when Greater Extensions are completed and are working.

Statement No. LXIII.—Estimated cost of production of Sheet Mill Production when Greater Extensions are completed and working.

Statement No. LXIV.—Statement showing the comparison of Blast Furnace Department cost for the years 1916-17 and 1921-22.

Statement No. LXV.—Statement showing the comparison of open Hearth Department costs for the years 1916-17 and 1921-22.

Statement No. LXVI.—Statement showing the comparison of Blooming Mill Department cost for the years 1916-17 and 1921-22.

Statement No. LXVII.—Statement showing comparison of 28″ Mill costs for 1916-17 and 1921-22.

Statement No. LXVIII.—Statement showing comparison of Bar Mill costs for 1916-17 and 1921-22.

Statement No. LXIX.—Statement showing prices of raw materials charged in cost sheets.

Statement No. LXX.—Statement showing depreciated value of fixed capital expenditure as at 31st March 1922.

Statement No. LXXI.—Statement showing cost value of fixed capital expenditure for the years 1911-12 to 1921-22.

Statement No. LXXII.—Statement showing depreciations on block values for the years 1911-12 to 1921-22.

Statement No. LXXIII.—Statement showing the value of stores and electrical stores purchased during 1921-22.

Statement No. LXXIV.—Statement showing rates of bonus for Blast Furnace

Statement No. LXXV.—Statement showing bonus rates paid to Open Hearth (Nos. I and II) men.

Statement No. LXXVI.– Statement showing bonus rates for Blooming and 28″ Mill.

Statement No. LXXVII.—Statement showing bonus rates paid to Plate Mill.

Statement No. LXXVIII.—Statement showing average selling price per ton of Finished Steel during the period July, 1912 to June, 1914 and from April, 1919 to March 1923.

Statement No. LXXIX.—Statement showing market value of Tata's Steel for 1921-22, after allowing a fair profit.

Statement No. LXXX.—Note regarding Contracts with the Railway Board and the Palmer Railways.

Statement No. LXXXI.—Statement showing estimated production of all Departments for the years 1923 to 1926.

Statement No. LXXXII.—Statement showing estimated allocation of finished steel output when Greater Extensions are working fully.

Statement No. LXXXIII.– Statement showing the programme of completion of Greater Extensions units.

Statement No. LXXXIV.—Statement showing the actual value and total depreciation of old plant for the year 1922-23 and the estimated value and estimated total depreciation for the year 1923-24 of the same old plant.

Statement No. LXXXV.—Statement showing comparison of costs U. S. A. and Canada, first quarter 1923 with Jamshedpur (February to May 1923).

Statement No. LXXXVI.—Statement showing capital expenditure of Greater Extensions in operation and depreciation on same.

Statement No. LXXXVII.—Statement showing comparison of products and cost of old and new plant.

Statement No. LXXXVIII.—Statement showing difference between the value of the Company's coal used in Works (for Operation Department) after taking into account depreciation on machinery and building and the value of coal purchased from outside collieries.

Statement No. LXXXIX.—Statement of prices paid to Messrs. McClintic Marshall Products Company, Limited, for Fabricated Material ordered out from the United States of America.

Statement No. XC.- Statement showing consumption of coal at collieries for years 1916-17, 1921-22, and 1922-23.

Statement No. XCI.– Statement showing the actual average cost per ton of raising the coal including overhead charges from January, 1912 to March 1923.

Statement No. XCII.—Statement showing Comparative costs of one 200-ton Open Hearth Tilting Furnace in India and U. S. A.

Statement No. XCIII.—Statement showing Comparative costs of one 500-ton Blast Furnace in India and U. S. A.

Statement No. XCIV.—Statement showing Comparative costs of one 28″ Mill in India and U. S. A.

Statement No. XCV.—Statement showing Construction of Stores, etc., during the year 1921-22.

Statement No. XCVI.—Statement showing detailed analysis of the ores, coal, coke, dolomite and limestone and also of the ash of the coke used by the Steel Company.

Statement No. XCVII.—Statement showing holdings of the Tata interests in the Tata Iron and Steel Company, Limited.

Statement No. XCVIII.—Note regarding dividends paid by the Tata Iron and Steel Company.

Statement No. XCIX.—Statement showing dividends paid to different classes of shareholders.

Statement No. C.—Note by the Tata Iron and Steel Company on the Representation of Mr. Homi.

Statement No. CI.—Note by the Tata Iron and Steel Company, regarding the efficiency of the Works.

Statement No. CII.—Statement by the General Superintendent of the Tata Iron and Steel Company, on the representation of Mr. Homi.

Statement No. CIII.—Note by the Tata Iron and Steel Company, explaining apparent decrease in the production per man.

Statement No. CIV.—Note by the Tata Iron and Steel Company explaining certain mistakes in the published evidence.

Statement No. CV.—Statement showing estimate of working capital after Greater Extensions are completed.

Statement No. CVI.—Statement by the Tata Iron and Steel Company regarding main items of excess spread between Pig Iron and Ingots in Jamshedpur from January to May 1923 over those in United States of America 1st quarter 1923.

Statement No. CVII.—Statement showing the value in Dollars year by year of the orders placed in America for the Greater Extensions.

सत्यमेव जयते

STATEMENT No. I.

Statement showing production in tons, number of covenanted and uncovenanted employees, the cost of labour and the unit cost of labour per ton.

COKE OVENS.

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . . .	1,54,971	6	27,427	657	1,22,152	1,49,579	0 15·44
1913-14 . . .	1,96,758	4	30,036	628	1,30,154	1,60,190	0 13·02
1914-15 . . .	1,96,683	3	22,303	656	1,10,067	1,32,373	0 10·76
1915-16 . . .	2,02,055	3	21,300	713	1,19,716	1,41,016	0 11·16
1916-17 . . .	2,30,533	3	25,012	950	1,90,747	2,15,759	0 14·97
1917-18 . . .	2,60,070	2	21,227	1,120	2,22,497	2,43,724	0 14·99
1918-19 (9 months) .	2,42,548	2	12,373	1,460	2,55,141	2,67,514	1 1·65
1919-20 . . .	3,31,372	...	...	1,910	4,50,618	4,50,618	1 5·76
1920-21 . . .	3,70,703	...	...	2,450	5,96,907	5,96,907	1 9·76
1921-22 . . .	3,59,923	...	...	2,353	6,01,112	6,01,112	1 10·72
1922-23 . . .	3,66,464	...	...	2,725	6,50,339	6,50,339	1 12·39

By January 1st, 1925, the production in this Department should increase from 359,923 tons in 1921-22 to 600,000 tons annually due to 3 batteries of new Bye-Product Coke Ovens being in full operation and the labour cost per ton should drop from Rs. 1-10·72 in 1921-22 to a sum not exceeding Re. 1-0·00.

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

BLAST FURNACES.

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . . .	1,28,238	28	87,240	846	3,18,883	4,06,123	3 2·67
1913-14 . . .	1,55,383	15	92,763	810	2,74,976	3,68,739	2 5·97
1914-15 . . .	1,60,567	12	85,543	743	2,02,707	2,88,250	1 12·72
1915-16 . . .	1,71,453	10	88,089	915	1,88,980	2,77,074	1 9·86
1916-17 . . .	1,54,553	9	77,056	838	1,73,515	2,50,571	1 9·94
1917-18 . . .	1,91,005	8	96,678	1,040	2,06,266	3,02,644	1 9·35
1918-19 . . .	1,62,831	8	89,919	1,550	2,04,065	2,93,984	1 12·88
1919-20 . . .	2,29,445	7	1,05,033	1,993	3,24,133	4,29,166	1 13·93
1920-21 . . .	2,61,608	8	1,41,469	2,293	5,33,909	6,75,378	2 9·31
1921-22 . . .	2,83,190	8	1,51,395	2,306	6,27,498	7,78,893	2 12·01
1922-23 . . .	2,48,463	8	1,39,444	2,339	5,75,968	7,15,412	2 14·07

By January 1st, 1925, the production in this Department should increase from 283,190 tons in 1921-22 to approximately 700,000 tons annually, the increase being due to 2 new furnaces which should be in full operation and the labour cost per ton should drop from Rs. 2-12·01 in 1921-22 to Rs. 1-4·00.

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

OPEN HEARTH.

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . .	31,385	68	1,68,186	900	1,64,238	3,32,424	10 9·47
1913-14 . .	77,844	68	3,05,022	860	2,08,351	5,13,373	6 9·52
1914-15 . .	96,182	55	2,18,355	750	1,85,035	4,03,390	4 3·10
1915-16 . .	1,23,427	32	2,89,166	980	2,31,627	5,20,793	4 3·51
1916-17 . .	1,39,433	31	3,47,584	1,010	2,52,600	6,00,184	4 4·87
1917-18 . .	1,81,313	33	4,91 686	1,490	3,85,231	8,76,917	4 13·39
1918-19 (9 months)	1,38,949	34	2,82,532	1,850	4,17,508	7,00,040	5 0·61
1919-20 . .	1,69,796	36	4,52,528	2,070	4,24,987	8,77,515	5 2·69
1920-21 . .	1,70,882	43	5,28,192	2,305	5,58,766	10,86,958	6 5·77
1921-22 . .	1,82,107	43	5,81,457	2,360	5,65,981	11,47,438	6 4·48
1922-23 . .	1,55,604	42	4,82,655	2,265	4,73,104	9,55,759	6 2·28

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

BLOOMING MILL.

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . .	27,277	6	45,887	217	84,945	1,30,832	4 12·74
1913-14 . .	58,745	6	50,082	198	82,167	1,32,249	2 4·02
1914-15 . .	84,433	6	58,867	182	91,715	1,50,582	1 12·54
1915-16 . .	1,08,104	3	62,367	224	1,08,315	1,70,682	1 9·26
1916-17 . .	1,23,046	3	42,416	235	1,21,933	1,64,349	1 5·37
1917-18 . .	1,53,089	8	49,132	260	1,35,966	1,85,098	1 3·35
1918-19 (9 months)	1,23,127	3	43,071	306	93,974	1,37,045	1 1·80
1919-20 . .	1,46,531	3	44,498	325	1,28,048	1,72,546	1 2·84
1920-21 . .	1,50,357	3	58,181	310	1,75,457	2,38,638	1 8·86
1921-22 . .	1,56,902	3	72,151	332	1,97,866	2,70,017	1 11·52
1922-23 . .	1,38,440	3	56,037	360	1,91,573	2,47,610	1 12·64

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

28″ Mill.

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . .	16,445	21	97,287	730	1,30,854	2,28,141	13 13·97
1913-14 .	41,142	21	1,49,008	648	1,20,027	2,69,035	6 8·63
1914-15 . .	57,003	21	1,29,547	641	2,09,857	3,39,404	5 15·27
1915-16 . .	67,707	20	1,31,013	791	2,92,729	4,23,742	6 4·14
1916-17 . .	68,859	18	1,05,617	905	3,48,855	4,54,472	6 9·60
1917-18 .	82,667	15	1,18,039	1,090	4,31,545	5,49,584	6 10·37
1918-19 . .	69,781	17	98,992	1,264	3,58,489	4,57,481	6 8·89
1919-20 . .	87,985	16	1,09,504	1,315	4,97,528	6,07,032	6 14·39
1920-21 . .	86,401	14	1,15,968	1,440	6,16,804	7,32,772	8 7·70
1921-22 . .	96,273	16	1,20,494	1,543	6,19,792	7,40,286	7 11·04
1922-23 . .	80,691	15	98,100	1,590	5,45,679	6,43,779	7 15·63

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

Bar Mills

Year.	Production in tons.	Covenanted Employees.	Total Wages and Bonus.	Uncovenanted Employees.	Total Wages.	Total cost of labour.	Unit cost per ton.
		No.	Rs.	No.	Rs.	Rs.	Rs. As.
1912-13 . .	2,685	11	23,687	567	42,072	65,759	24 7·86
1913-14 . .	7,730	11	62,991	541	57,501	1,20,492	15 9·40
1914-15 . .	9,762	9	42,026	500	83,898	1,25,924	12 14·39
1915-16 . .	23,293	7	45,850	620	1,78,911	2,24,761	9 10·39
1916-17 . .	29,868	4	28,915	750	2,16,987	2,45,902	8 3·73
1917-18 . .	41,223	3	46,119	980	2,81,121	3,27,240	7 15·01
1918-19 (9 months)	32,207	3	30,888	1,150	2,73,566	3,04,454	9 7·25
1919-20 . .	34,242	4	28,836	1,170	3,36,839	3,65,675	10 10·87
1920-21 . .	35,955	4	48,116	1,165	4,22,049	4,70,165	13 1·22
1921-22 . .	29,598	4	39,095	1,030	3,67,699	4,06,794	13 11·84
1922-23 . .	32,176	4	42,583	1,050	3,57,023	3,99,606	12 6·72

N.B.—For comparison purposes the year 1921-22 should be taken as in the years 1920-21 and 1922-23 there were strikes which affected production of the plant for at least 3 months.

STATEMENT No. II.

(Newspaper cutting.)

CARGO FLEET IRON CO.

IRON AND STEEL INDUSTRY.

Vital factors.

The adjourned Annual Ordinary General Meeting (for 1921) of the Cargo Fleet Iron Company, Ltd., was held at Middlesborough yesterday, 29th November.

The Right Hon'ble Lord Furness (the Chairman) said: The year ended 30th September 1921, was one of continual labour unrest, which naturally resulted in the loss of many orders. I should like to refer to certain matters of extreme importance to our industry and which most seriously affect our cost of output and competitive capacity. There are three vital factors—namely, the price of coal, the present high railway rates, and the excessive taxation—both National and Local. You will appreciate the vital importance of cheap coal when I tell you that our works, when in full operation, consume no less than 8,500 tons weekly. The price of coal to-day, however, is altogether incompatible with the prices we are obtaining for our finished steel. The average price of the coal bought for our gas producers during the twelve months ended 30th September 1913, was 13*s.* per ton, whereas the average price for the corresponding period in 1922 was 23*s.* per ton, representing an increase of 77 per cent. In 1913 the selling price of finished steel was £7 10*s.* per ton delivered, as against £8 10*s.* per ton at the present time. That is to say, as against an increase of 77·39 per cent. on coal—which is one of the largest items of cost in the manufacture of steel—we only receive 13⅓ per cent. more for our finished products. Then, again, there is the question of railway rates. Since I last addressed you certain small concessions have been made, and very welcome as they are these reductions are totally inadequate to meet the urgent requirements of the Iron and Steel Industry. When we met a year ago I gave comparative figures showing the increased cost of carriage on coal and coke, iron ore, etc., required in the production of 1 ton of finished steel, including the carriage on the latter to certain destinations. Whereas in July 1913 the total cost of such carriage per ton of finished steel amounted to 19*s.* 8*d.*, it is to-day 33*s.* 11*d.*, per ton—representing an increase of 72·39 per cent. Here, again, as in the case of coal, we are burdened with the enormous increase of 72·39 per cent. in another vital item of cost whilst the increase in the selling price of finished steel, as I have just indicated, is only 13⅓ per cent. This insignificant increase in selling price does not enable us to compete in foreign markets. In the depressed state of trade that exists to-day we must stimulate demand by cheaper prices; counsequently the moral of these figures is that very considerable reductions are imperative in the immediate future, both in coal prices and railway rates, if our Industry is to recover its position in the markets of the world.

Burden of taxation.

With regard to the question of taxation, it will interest you to know that since March 1917 this Company *has paid no less than* £1,255,000 *to the Government in Excess Profits Duty, Income Tax, and Corporation Profits Tax—a sum representing* 1¼ *times the Ordinary Share Capital of the Company*—and there are still large sums claimed by the Authorities. Our burden as a Company is undoubtedly much heavier than that of other iron and steel works, owing to the inequitable incidence of the war taxation on new concerns to which I have referred on former occasions. *I must also draw attention to the question of local rating—towards which your works have recently been* *called upon to contribute for one year no less than* £21,858 8*s.* 10*d.—which is nearly four times more than the pre-war assessment.* These charges are crippling to industry and accentuate the difficulty of securing business, with the result that works have to close down or go on short time, this bringing increased unemployment with increased charges for Relief and heavy arrears of rates which cannot be collected from those who are without work.

The Report and Accounts were unanimously adopted.

SOUTH DURHAM STEEL & IRON CO.

Advantages of amalgamation.

The Rt. Hon'ble Lord Furness, presiding yesterday at Middlesborough at the 24th annual meeting of the South Durham Steel and Iron Co., Ltd., said it would be seen from the balance-sheet that the profit for the year was £99,656, and bearing in mind the general depression prevailing over the period under review they must consider themselves fortunate in being able to record such a satisfactory result of the year's working. After providing for interest on Debenture Stock, Dividend on Preference Shares, and writing off £30,000 Depreciation—the same as last year—the Directors had decided to recommend a dividend of 10 per cent., less tax, on the Ordinary Share Capital and to carry forward to next year the sum of £114,911. The Reserves stood at the same figure as in the two previous years, namely £1,445,783.

With regard to a general revival in their trade, he thought the prospects for steel plate orders were very uncertain for some time to come because the present productive capacity of existing steel works in this country—both actual and potential—was far too great for profitable absorption, and a large increase over the pre-war demand was necessary for the consumption of its possible output. For this reason it appeared to him that the iron and steel trade of this country was in a somewhat similar predicament to that of the United States of America shortly before the formation of the United States Steel Corporation in 1900. The creation of the United States Steel Corporation had the effect of maintaining a happy medium and safeguarded extreme fluctuations in prices. He was convinced that, assuming it were possible for the prominent manufacturers representing, say, at least 50 per cent. of the Iron and Steel trade of this country to combine and conduct their business on a similar basis to the United States Steel Corporation. It would prove a great advantage to makers and consumers.

The report and accounts were adopted.

The adjourned 23rd annual (1921) meeting was previously held and the accounts passed.

STATEMENT No. III.

Statement showing the Capital of all the subsidiary Companies at Jamshedpur and the Tata Iron and Steel Coy.'s share in the Capital of the subsidiary Companies.

	Name of the Company and Managing Agents, if any.	Capital.				Finished Products.	Estimated total annual output.
		Authorised.	Subscribed.	Paid up.	Steel Co.'s share.		
		Rs.	Rs.	Rs.	Rs.		
1	Enamelled Ironware Ltd. Managing Agents :— Kilburn & Co., Calcutta	15,00,000 Issued.	10,00,000	9,37,000	1,50,000	Enamelled Ironware of various descriptions.	About 200 tons in the beginning.
2	*The Indian Cable Co., Ltd. Managing Agents :— The British Insulated & Helsby Cables, Ltd., Calcutta.	30,00,000	17,00,000	16,60,000	*Nil*	Copper wire, rubber covered cables	Not known.
3	The Tinplate Co. of India Ltd. Managing Agents :— Shaw Wallace & Co., Calcutta	75,00,000	75,00,000	75,00,000	25,00,005	Tinplates	28,000 to 30,000 tons when operating at full capacity.
4	The Calmoni Engineering Co., Ltd.	37,50,000	28,00,000	28,00,000	*Nil*	Jute manufacturing machinery	300 tons of machinery, 100 tons of castings.
5	The Agricultural Implements Co., Ltd. Managing Agents:— Vithaldas Damodar Thackersey & Co., Bombay.	25,00,000	25,00,000	25,00,000	10,50,000	Picks, pick-axes, Beater picks, miners picks, kodalies, trenching hoes, ballast rakes, crowbars, plate layers' tools, sledge hammers, etc., and also galvanized hollow wares and black sheet metal wares.	4,000 tons.
6	The Indian Steel Wire Products, Ltd. Agents :— Lalubhai Walchand Capadia & Co., Bombay	50,00,000 Issued. 25,00,000	24,82 100	24,82,100	*Nil*	Wire, wire nails, metal shelving and structural steel.	5,000 tons of wire. 5,000 tons of metal shelving.
7	*The Peninsular Locomotive Co., Ltd. Managing Agents :— Kerr, Stuart & Co., Ltd., London	60,00,000 Issued. 16,50,500	16,50,500	Not known.	*Nil*	Locomotives	Not known.

* Agreement not yet completed.

STATEMENT No. IV.

Summary of terms of Agreements with Subsidiary Companies.

	Name of the Company.	RAW MATERIAL TO BE SUPPLIED BY THE STEEL COMPANY.			LAND.			ELECTRICITY.		WATER.		REMARKS.
		Annual quantity.	Rate.	Period of Agreement.	Area.	Period.	Rent.	Rate.	Period.	Rate.	Period.	
1	Enamelled Ironware Limited.	Not specified so far. Approximately 200 tons of steel.	*For the first 5 years*—mean of English and American f. o. b. prices for similar material *plus* 10*s*. per ton. *For the remaining 20 years* price not more than c. i. f. landed Calcutta price of British material of similar quality *plus* ½ Customs Duty.	25 years from the date of first supply.	108·32 acres.	99 years .	Rs. 24 per acre per annum.	Sliding scale based on cost of coal such as ·63 anna per unit when coal at Rs. 4-8 to Rs. 5-8. ·75 anna per unit when coal at Rs. 7-8 to Rs. 8-8 and rising by ·02 a. for every rupee in the cost of coal.	5 years but renewable during the term of lease of land on revised terms.	Sliding scale according to the quantity consumed such as 6·45 as. per 1,000 gallons for consumption up to 15 lacs gallons per month and then reducing gradually to 5·25 as. per 1,000 gallons for consumption over 3 crore gallons per month.	5 years but renewable during term of lease of land on revised terms.	
2	*The Indian Cable Co., Limited.	*Nil.*	....	..	148·31 acres.	Do.	Do.					
3	The Tinplate Co. of India Ltd.	16,000 tons first year; 20,000 tons second year; 28,000 tons third year; 35,000 tons from the 4th year of steel sheet bar.	*Provisional price* f. o. r. Swansea price of similar material. *Final adjustment* on the basis of the average cost of production to the Tinplate Co. and the average price at which foreign tinplates could have been obtained in India during the year. If the average cost is	25 years from 1923.	177·46 acres for Factory site. About 65 acres for Residential quarters.	Do.	Rs. 24 per acre per annum. Rs. 48 per acre per annum.					

STATEMENT No. IV—*concluded.*

Summary of terms of Agreements with Subsidiary Companies—concld.

	Name of the Company.	RAW MATERIAL TO BE SUPPLIED BY THE STEEL COMPANY.			LAND.			ELECTRICITY.		WATER.		REMARKS.
		Annual quantity.	Rate.	Period of Agreement.	Area.	Period.	Rent.	Rate.	Period.	Rate.	Period.	
			less than the average price of foreign tinplates the Tinplate Co. is to give half the difference to the Steel Co. in addition to the provisional price and if the average cost is more than the average price of foreign tinplates the Steel Co. is to pay half the difference to the Tinplate Co., out of the provisional price received.					Sliding scale based on cost of coal such as ·63 anna per unit when coal at Rs. 4-8 to Rs. 5-8. ·75 anna per unit when coal at Rs. 7-8 to Rs. 8-8 and rising by ·02 a. for every rupee in the cost of coal.	5 years but renewable during the term of lease of land on revised terms.	Sliding scale according to the quantity consumed such as 6·46 as. per 1,000 gallons for consumption up to 15 lacs gallons per month and then reducing gradually to 5·25 as. per 1,000 gallons for consumption over 3 crore gallons per month.	5 years but renewable during term of lease of land on revised terms.	
4	The Agricultural Implements Co., Ltd.	1,500 tons of steel minimum; 3,000 tons maximum.	*First 5 years*—mean of English and American f. o. b. quotations for similar material *plus* 10*s*. per ton. *Second 5 years*—mean of English and American c. i. f. landed Calcutta quotations for similar material *plus* ½ Duty.	10 years from the date of first supply.	104·47 acres.	99 years	Rs. 24 per acre per annum.					

5	The Indian Steel Wire Products Ltd.	4,000 tons of steel minimum; 20,000 tons maximum.	Do. .	Do. .	156·57 acres.	Do. .	Do. .	Do. .	Do. .	Do. .	Do. .	
6	*The Peninsular Locomotive Co., Ltd.	All requirements. Tonnage not specified.	Average Calcutta market price less 7½ per cent.	Do. .	124 acres.	Do. .	Do. .	Do. .	Do. .	Do. .	Do. .	
7	The Calmoni Engineering Co., Ltd.	Maximum 6,000 tons of Pig iron. Steel requirements not specified.	*Pig Iron* Rs. 45 per ton. *Steel* f. o. r. Howrah price current at the time for similar material.	10 years from the date of first supply.	100 acres .	years .	Rs. 24 per acre per annum.	·75 anna per unit.	5 years but renewable during the term of lease of land on revised terms.	Sliding scale according to the quantity consumed such as 6·45 as. per 1,000 gallons for consumption up to 15 lacs gallons per month and then reducing gradually to 5·25 as. per 1,000 gallons for consumption over 3 crore gallons per month.	5 years but renewable during term of lease of land on revised terms.	Exempted from making contribution to the Capital Expenditure of the Town.

* Agreement not yet completed.

STATEMENT No. V.

Statement showing names of Railways with whom the Coy. have long term contracts, the dates of commencement and expiry of the respective contracts and the estimated tonnage of annual delivery.

Name of Railways.	Period of Contract.						
Railway Board . . .	7	Years commencing	from	1st April 1920 to	31st March 1927	300,000 Tons in 7 years.	
B. N. Railway . . .	5	,, ,,	from	1st April 1920 ,,	31st March 1925	Maximum 15,000 tons per year.	
B., B. & C. I. Railway . .	6	,, ,,	from	1st April 1920 ,,	31st March 1926	6,000 Tons per year.	As per estimate given to us by Mr. Palmer.
M. & S. M. Railway . .	6	,, ,,	from	1st April 1920 ,,	31st March 1926	6,000 ,, ,,	
N. G. S. Railway . . .	6	,, ,,	from	Ditto		2,000 ,, ,,	
Burma Railways . . .	6	,, ,,	from	Ditto		4,750 ,, ,,	
B. & N.-W. Railway . .	6	,, ,,	from	Ditto		4,750 ,, ,,	
A. B. Railway . . .	6	,, ,,	from	Ditto		10,000 ,, ,,	
Assam Railways Trading Co., Ltd.	6	,, ,,	from	Ditto		750 ,, ,,	
S. I. Railway . . .	6	,, ,,	from	Ditto		3,000 ,, ,,	

STATEMENT No. VI.

Note showing how fall of prices owing to depreciated Currency would, in the opinion of the Tata Iron and Steel Company, be counteracted.

With regard to unfair competition arising from depreciated exchanges, we wish to make the following suggestion which provides a very simple automatic compensation.

In cases where the exchange with a country is depreciated by more than twenty-five per cent. the duty should be so fixed that the total price of the imported article landed in India should equal the price of similar material imported from a country where exchange is more or less normal. For this purpose we are quite prepared to accept England as the country in question.

The system can be worked very simply as follows and without the need for any prolonged or detailed investigation when the emergency arises.

The average price of all standard materials in England c.i.f. India will be obtained each quarter by the Tariff Board or any authority authorised to deal with this matter. A record will also be kept of the prices at which material is imported from countries with depreciated exchanges for the same quarter. For the succeeding quarter the duty will be raised automatically to a figure sufficient to provide that the total price of the imports from the country with a depreciated exchange shall be equal to the English price. If the adjustment in duty is made quarterly and it is known that it will be made there should be no dislocation of trade and there should be ample protection against the effect of the depreciated exchanges.

To take an instance. If during the first quarter of the year the price of beams imported into this country from England has been £10 and from Belgium £9 and the duty on beams is Rs. 50, then for the next quarter the duty on beams from Belgium will be fixed automatically at £1 extra and the total duty on them will be Rs. 65, the duty on beams from England and America remaining at Rs. 50.

सत्यमेव जयते

STATEMENT No. VII.

Statement showing current c. i. f. prices, and the Tata Iron and Steel Coy.'s selling price and cost price.

—	English Current price for export as per "Iron & Coal Trades Review" of 20th July 1923.	Selling price of T.I.S.Co. products April—July 1923 f.o.r. Tatanagar.	Present selling prices f.o.r. Calcutta.	Cost price for the month of July 1923.
	c.i.f. Calcutta.			
	Rs.	Rs.	Rs.	Rs.
Beams . . .	151·14	156·3*	168	179·39
Rails . . .	151·14	124·13	..	179·39
Bars . . .	155·10	156·6*	178	201·59

* These prices include material sold under long term contracts or contracts entered into last year when prices were considerably lower. For comparison with Col. 1 our present selling prices should be taken.

STATEMENT No. VIII.

Statement showing the pre-war c. i. f. prices and the Steel Company's Selling price.

—	Pre-War price Feb.-May 1914 Average c.i.f.	Selling price of T.I.S.Co., products f.o.r. Tatanagar.	
	Rs.	1912-13 Rs.	1913-14 Rs.
Structural per ton	94·11	108·4	103·13
Heavy Rails per ton . . .	100·12	117·8	101·4
Bar Mill Material per ton . . .	121·12	108·5	108·12

STATEMENT No. IX.

Note showing the yearly Capital and recurring expenditure incurred by the Tata Iron and Steel Co. during the last two years on the Technical Institute and the grants received from the Local Governments and Indian States.

The students now in the Institute come from the various provinces as follows :—

	2nd year.	1st year.
Bihar & Orissa	7	6
Bengal	3	8
Assam	*nil*	2
U. P.	1	*nil*
Madras	1	2
Central Provinces	1	1
Punjab	3	3
Bombay	*nil*	*nil*
Mysore	2	*nil*

Of the students admitted in 1921 six have been discharged.

Of the students admitted in 1922, 7 have been discharged and 2 have left of their own accord with the consent of the Institute.

The number of applications for entry in November 1922 was about 2,700. Applications are still being received for 1923. Details regarding applications are attached hereto.

The staff consists of a Director (B.Sc. Hons. London), with practical experience at Vickers Ltd., Sheffield and with 6 years' educational experience in India, two Assistants with the degree of Bachelor of Metallurgy, Sheffield, and one Indian Bachelor of Science, Calcutta.

The cost of training a student works out to Rs. 250 a month.

Applications for admission are invited by advertisements in papers. The Government of Bengal and Bihar and Orissa also advertise on their own account.

Finance :—

——	1921-22			1922-23		
	Rs.	A.	P.	Rs.	A.	P.
Recurring expenditure	42,710	5	0	71,009	3	3
Receipts from outside :—						
Mysore	4,800	0	0	4,800	0	0
Bihar & Orissa.	8,333	5	4	25,000	0	0
Bengal	..			10,000	0	0
Messrs. Bird & Co.	..			1,375	0	0*
Sir Ratan Tata Trust	..			15,000	0	0
Total contributions .	13,133	5	4	56,175	0	0
Borne by Steel Company	29,576	5	8	14,834	3	3
Actual Capital Expenditure . .	1,30,519	4	8	11,277	0	8
Receipts from Bihar & Orissa . .	1,00,000	0	0	..		
Borne by Steel Company . . .	30,519	4	8	11,277	0	8

* No stipend.

The Sir Ratan Tata Trustees are paying Rs. 5,000 a year for five years for the construction of a hostel.

Total ultimate capital expenditure will be Rs. 3,00,000.

Applications received in November 1921.

No detailed list of applications was made out in the first year. Thirty-two people from Bombay Presidency applied, 6 were selected, but only one came to Jamshedpur. He was not passed by the Committee. After this our Bombay Office was given the addresses of all applicants but only 5 went to see Mr. Gibbs in Bombay. All were failures except one who was to have been admitted but failed to come.

Applications received in November 1922.

From Bombay there were 63 applicants of whom only 4 were considered to be eligible judging from the particulars they submitted. Two candidates came to Jamshedpur. One of these was found to be medically unfit and was not admitted and the other, Mr. T. R. Kapadia, stayed until April 30th, 1923, and did not return after the vacation. It appears that he found the work too strenuous.

सत्यमेव जयते

STATEMENT No. X.

Statement showing the number of applications for admission to the Jamshedpur Technical Institute during the last two years, province by province, for November 1922.

Province.	Number of Application letters.	Number of students who are of good physique and otherwise qualified.
Bihar & Orissa	224	23
Bengal	885	64
Central Provinces	57	..
Madras	641	29
Bombay	63	4
United Provinces	173	7
Assam	43	6
Punjab	380	31
Central India	11	1
North-Western Province	13	..
Berar	1	..
Mysore	53	1
Burma	2	..
North-Western Frontier Province	11	1
Coorg	8	1
Baroda	4	..
Deccan	9	..
Cochin	14	2
Indore	3	..
Travancore	8	2
Cooch Bihar	2	..
Bikanir	1	..
Ajmere	8	..
Sindh	4	..
Kashmir	14	..
Jodhpur	3	..
Rajputana	3	..
	2,638	172

STATEMENT No. XI

Note relating to compensating protection referred to in Mr. Peterson's evidence of the 23rd August 1923.

At the last Meeting the President asked questions regarding the effect, if any, which the protective duty on steel would have on industries in the country which use steel as their raw material. We said that it was impossible to answer this question at all accurately except after considering the conditions of each particular case, and that we would prefer not to prejudice any claim which such industries might wish to make, but that we were quite willing to give our opinion in any particular case after the claim had been made. We have considered this question and we think it is possible to give a considered reply on the general conditions to be applied in such cases. Such general conditions must, however, be subject to the general rule that unless the industry is essential for purposes of self-protection, protection should not be afforded if it is not shown that the particular industry will be able ultimately to meet foreign competition without protection. So far as our experience goes, our steel is used in many different ways; a large portion of it, about 15,000 tons, at present finds its way through the dealers into the hands of small industries such as Blacksmiths, Wheelwrights, etc. In the case of such industries a protective duty will increase the price of the article produced by the amount of the duty. In our opinion, the whole of this duty will be borne by the ultimate consumer and it will not affect consumption as, by the very nature of the trade, these articles must be manufactured in this country and are required by it. These small industries will, therefore, not be harmed by the imposition of the duty. In the case of larger industries, where the article is not commonly imported in a standardised form and in large quantities, the same conditions will apply. The increase in the price of the manufactured article, which must result from the duty, will be passed on to the ultimate user. There will be no question of import, because by the custom of the trade and probably from its very nature such articles will always have to be made in this country. Such articles would be replacements of parts of existing machinery in cases where such parts are not standardised and where the owner of the machines would lose heavily in waiting to have the part required made in a foreign country and might not be able to do so satisfactorily or structural material where a damaged part had to be replaced or by the nature of the case fabrication was necessary on the spot. Where manufactured articles are already imported in a standardised form in large quantities and are also manufactured in the country, the imposition of a duty on steel will obviously handicap the industry. Such cases would be, to take simple instances, small machines, tools of all sorts, nails, wire, buckets, ironware, shelving, etc. A distinction has to be made in these cases. In some cases the manufacturing process is extremely simple and the enhanced value yielded by it gives a very large margin of profit. The amount of profit may be so large that protection is not really required and the industry should be able to compete with the imported article with the advantage which it obtains from its geographical position and the advantage of the cheap labour available for simple processes in this country. In other cases the quantity of steel actually used may be very small in proportion to the value of the article made. In such cases no substantial handicap would be imposed on the industry and we should not advocate protection. In cases in which the handicap is large we think the manufacturer should be protected by a duty equivalent to the increase resulting from the duty on steel, provided he is able, within a reasonable period, to reduce his costs and to establish the industry without protection. In the case of large scale industries such as the manufacture of wagons, locomotives, machinery, etc., where a reasonably promising attempt has been made to establish the industry in the country, we think a compensating duty should be imposed. The amount of the duty will have to be decided in each particular case, but in the case of wagons and bridge-building material we are of opinion that a compensating duty should be given at least equal to the increase in cost caused by the duty placed on steel. We shall manufacture all necessary bridging material and we are strongly of opinion that bridge-building and wagon-making should be encouraged in this country as essential industries, and are also of opinion that both industries will eventually be able to do without protection. With regard to fabricated material, we think the same duty should be placed on it as is placed on steel.

In each particular case as these come before the Board we should welcome an opportunity of expressing our opinion if the Board desire us to do so.

सत्यमेव जयते

STATEMENT No. XII.

Statement showing conversion cost.

	1916-17		1921-22		1922-23	
	Rs.	Per cent.	Rs.	Per cent.	Rs.	Per cent.
Pig & Scrap cost . . .	29·46	26·77	47·60	28·17	55·62	29·78
Conversion to Ingots . .	43·80	39·81	68·24	41·82	74·18	39·73
Conversion to Blooms . .	10·27	9·33	13·89	8·51	16·97	9·09
Conversion to Rails . .	26·51	24·09	33·46	20·50	39·98	21·40
TOTAL COST OF RAILS .	110·04	100·00	163·19	100·00	186·75	100·00

N.B.—Credit for Scrap taken in Pig & Scrap.
Credit for Second Class Rail for sale is distributed over all items.

Cost of Rail Mill.

	1916-17		1921-22		1922-23	
	Rs. per ton	Per cent.	Rs. per ton	Per cent.	Rs. per ton	Per cent.
Pig & Scrap . . .	29·46	26·77	47·60	29·17	55·62	29·79
Feeding Material . . .	5·79	5·26	6·44	3·95	4·15	2·22
Labour (Producing) . .	13·99	12·72	17·93	10·99	17·00	9·12
Stores	6·33	5·75	8·20	5·02	7·61	4·08
Refractories . . .	1·36	1·23	3·91	2·40	3·20	1·72
Ingot Moulds . . .	1·36	1·23	1·64	1·01	1·37	·73
Relining Fund . . .	7·05	6·41	9·83	6·02	9·96	5·34
Gas Producers . . .	5·51	5·01	10·78	6·61	13·52	7·24
Service Expense . . .	8·20	7·45	14·14	8·66	16·65	8·92
Steam	2·42	2·21	5·49	3·36	7·86	4·21
Rolls	2·31	2·10	2·29	1·40	2·52	1·35
Interest	2·71	2·46	12·24	7·50	17·02	9·12
Depreciation and Bombay Charges	23·55	21·40	22·70	13·91	30·27	16·16
RAILS COST	110·04	100·00	163·19	100·00	186·75	100·00

N.B.—Credit for Scrap taken in Pig & Scrap.
Credit for Second Class Rails for sale is distributed over all items.

STATEMENT No. XIII.

Statement giving particulars of greater extension units in operation in August 1923.

COKE OVENS.

2 Batteries of Wilputte Coke Ovens:—

	Tons.
Average daily capacity per battery as per Flow Sheet	427
Maximum production in 24 hours hitherto obtained	500
Average daily production (April—July 1923)	420

1st Battery commenced operating August 10th, 1922.

2nd Battery commenced operating March 15th, 1923.

BLAST FURNACES.

"D" Blast Furnace:—

	Tons.
Average daily capacity	500
Maximum production in 24 hours hitherto obtained	552
Average daily production (April—July 1923)	426

Commenced operating December 6th, 1922.

"E" Batelle Furnace:—

	Tons.
Average daily capacity	250
Maximum production in 24 hours hitherto obtained	315
Average daily production (April—July 1923)	193

Commenced operating August 27th, 1919.

DUPLEX PLANT.

No. 1. Open Hearth Tilting Furnace:—

	Tons.
Now working as ordinary Stationery Open Hearth Furnace.	
Average daily capacity (working day*)	150
Maximum production in 24 hours hitherto obtained	350
Average daily production (working days*) (April—July 1923)	158

Commenced operating February 13th, 1923.

N.B.—The Tilting Furnaces are intended to operate in conjunction with the Converters, thus completing the Duplex Process. When the Plant is completed each Tilting Furnace is estimated to produce 500 tons of steel daily or 15,000 tons each monthly.

---

* Working days mean actual days in operation, time lost for repairs, etc., being omitted.

PLATE MILL.

	Tons.
Average daily capacity	154
Maximum production in 8 hours hitherto obtained .	94¾
Average daily production (April—July 1923) . .	67

Commenced operating February 1st, 1923.

N.B.—Owing to steel not being available the operation of this Mill has been restricted to only one shift daily.

सत्यमेव जयते

STATEMENT No. XIV.

Note on letter No. D. O. 135, from the Tariff Board, dated the 24th August, addressed to Mr. Peterson.

In regard to the information asked for by the Tariff Board in the above letter, I wish to comment as follows:—

Question No. 1.—A note showing how the present cost on various items of production of steel is likely to be reduced in the future.

Answer.—This I take to be an enquiry why the spread in the cost of converting pig iron into steel ingots at our works is higher than that in other countries and which we consider to be about Rs. 10 per ton. The cost is likely to be reduced in the future for the following reasons:—

(*a*) *Limestone.*—Due to the use of revolving kilns using Coke Oven Gas instead of kilns using an inferior fuel (Coke).

(*b*) *Fuel.*—Due to improvements in the quality of coal which means less coal per ton of finished product and a reduction in the price per ton of coal due to the improvements which are being installed at the Steel Company's collieries such as Electrical Coal Cutting Machines, Electric haulage, etc.

(*c*) *Labour.*—Due to higher production which means a larger tonnage per employee.

(*d*) *Materials in repairs and maintenance, tools, lubricants and miscellaneous charges.*—Due to fall in world prices.

(*e*) *Furnace repairs.*—Due to improvements in the quality of building and basic materials.

(*f*) *Contingent Fund.*—Due to decrease in covenanted labour.

(*g*) *General Works Expense.*—Due to increased tonnage.

सत्यमेव जयते

STATEMENT No. XV.

Note on demi-official letter No. 135, from the Tariff Board, dated the 24th August 1923, addressed to Mr. Peterson.

Question No. 2.—A statement showing the total expected output of different kinds of iron and steel when the Greater Extensions are complete and the capacity of production of the existing plant.

As operating on the 1st of April 1922.

Answer.—A statement showing the total expected output of different kinds of iron and steel when the Greater Extensions are complete, is attached hereto. These Figures are similar to those shown on the Flow Sheet,* four copies of which have already been submitted to the Tariff Board.

A statement is also attached showing the actual production of the plant as operating on the 1st of April 1922.

The figures for the year April 1st, 1921, to March 31st, 1922, are actual productions and the figures shown for the year April 1st, 1922, to March 31st, 1923, are arrived at by omitting the months of September, October, November and December 1922 and multiplying the average of the other eight months by twelve. The reason for this is that although the strike which occurred on September 19th, 1922, ended on 23rd October 1922, normal production was not restored until January 1923.

---

* Not printed.

Statement showing actual output from plant existing on April 1st, 1922.

——	Output during year ending March 31st, 1922.	Output during year ending March 31st, 1923.*
	Tons.	Tons.
Pig Iron	270,270	286,062
Ferro Manganese	3,230	1,644
Steel Ingots	182,107	182,452
Blooms and Billets	156,902	162,229
28″ Mill products	96,273	94,102
Bar Mill products	29,598	35,962

* The above figures giving the output for year ending March 31st, 1923, have been obtained by taking the average monthly output during the year excluding September, October, November and December 1922, and multiplying it by 12. The reason for doing this, is that although the strike which commenced on September 19th, 1922, ended on October 23rd, 1922, normal production of the plant was not restored until January 1923.

Statement showing expected output of iron and steel when greater extensions are complete and from existing plant.

	Tons.	Tons.
Pig Iron	....	610,200
Ferro Manganese	....	7,600
Steel Ingots	....	570,000
Blooms, Slabs and Billets . . .	....	469,100
New 28" Mill	175,000	....
Old 28" Mill	60,000	....
Plate Mill	48,000	....
Merchant Bar Mill	43,900	....
Old Bar Mills	18,000	....
Sheet Mills	36,000	....
Sheet Bar	35,000	....
Sheet Sleepers	2,820	....
Blooms and Billets for Sale . . .	3,000	421,720

सत्यमेव जयते

STATEMENT No. XVI.

Capital Expenditure on greater extensions in operation up to 31st March 1922.

	Rs.	A.	P.
Batelle Furnace	38,06,250	7	3
Roll Shop (Part)	1,85,282	7	3
Structural Shop	6,29,172	13	9
Machine Shop No. 2	32,64,647	7	2
Pattern Shop	1,45,622	12	10
General Foundry	1,50,916	5	3
Forge Shop	83,306	5	6
Electric Power—			
(*a*)	6,26,900	2	5
(*b*)	21,768	14	4
(*c*)	63,588	13	10
(*d*)	1,36,879	8	7
(*e*)	47,413	5	3
(*f*)	7,588	3	8
Track System	17,21,643	14	6
Iron Ore Mines—			
Gorumahisani	2,98,288	7	10
Sulaipat	40,931	7	7
Dolomite Quarries "K" Lease	4,77,965	7	5
Site Account	19,67,239	9	7
Construction Tools	12,88,432	7	3
Drainage	4,42,472	8	6
Rolling Stock	14,85,870	14	7
Jessops Shop	1,70,967	6	8
Jessops Power House	3,686	10	1
Soaking Pits	2,28,889	13	0
Machine Shop No. 1 Extension	2,40,375	4	4
8·15 M. P. Motors	12,000	0	0
4 Cinder Cars	1,00,000	0	0
Plate Mill	2,87,587	2	10
Sheet Bar and Billet Mill Stockyard	47,864	14	9
Rail Finishing Department	1,61,693	6	8
Blooming Mill	16,673	1	5
"D" Blast Furnace	38,001	12	7
Power House No. 2	57,700	3	5
Pump House No. 2	40,247	4	0
Narrow Gauge Line to Khorkai Brickfield	81,148	0	0
TOTAL	1,83,79,107	7	9

सत्यमेव जयते

The Greater Extensions Capital Expenditure in Operation Account for the year ending 31st March, 1922.

—	Value.			Rate % per annum.	Amount of Depreciation.		
				Per cent.			
Works Construction.	Rs.	A.	P.		Rs.	A.	P.
Machinery	1,30,15,713	12	8	7½	9,76,178	0	0
Buildings	41,03,735	11	9	5	2,05,186	0	0
Ore Mines and Quarries.							
Machinery	6,91,376	8	5	5	34,568	0	0
Buildings	1,25,808	14	5	2½	3,145	0	0
Sanitary.							
Machinery and Plant . .	4,42,472	8	6	5	22,123	0	0
TOTAL .	1,83,79,107	7	9		12,41,200	0	0

सत्यमेव जयते

STATEMENT No. XVII.

Customs Duties.

The following shows the total figures:—

	Greater extensions.			Operation.		
	Rs.	A.	P.	Rs.	A.	P.
Duty paid 1919-20 . . .	4,84,774	14	5	not available.		
1920-21 . . .	5,50,327	12	9	not available		
1921-22 . . .	9,84,645	0	3	1,61,576	7	0
1922-23 . . .	3,35,677	1	0	1,38,939	13	3

This is after allowing for refunds.

The gross amount in 1922-23 was Rs. 4,07,000 but Rs. 72,000 was secured in refunds. This amount Rs. 4,07,000 can be classified as follows:—

	Rs.
Cement	62,000
Electric appliances	31,500
Steel and manufactures thereof	62,500
Machinery	2,37,000
Miscellaneous	14,000
	4,07,000

Of the refunds obtained about Rs. 23,000 was on articles imported in 1922-23 and Rs. 49,000 to articles imported in 1921-22. It takes from 6 months to 2 years to obtain a refund.

The import duty on goods imported in 1922-23 is, therefore, Rs. 4,07,000 less Rs. 23,000.

In 1922-23 the proportion of duty on machinery to total is much higher than in previous years because:—

(*a*) the result of various important discussions as to definition of machinery affected the assessment;

(*b*) in November 1921 Government passed orders to the effect that large classes of goods hitherto assessed as electrical accessories should be assessed at the same rate as machinery.

Since 1st March 1923 the revision of the wording of the Tariff has resulted in a much larger proportion of our imports being assessed at 2½ per cent. than before.

No detailed classification of duties for 1921-22 and previous years is possible without several weeks work, but probably and speaking roughly, the proportion is somewhere as follows:—

	Per cent.
Cement	15
Electrical goods	20
Steel and manufactures	20
Machinery	40
Miscellaneous	5
	100

STATEMENT No. XVIII.

Statement showing the amount paid by the Tata Iron and Steel Company for Railway freight, Customs duty, etc., during the year ending 31st March 1923.

	Rs.	A.	P.
1. Net railway freight paid for incoming materials for operation from 1st April 1922 to 31st March 1923	22,99,651	0	0
2. Net railway freight paid for incoming materials for greater extensions from 1st April 1922 to 31st March 1923	2,60,186	8	0
3. Net railway freight paid for outgoing materials .	9,38,778	2	0
4. Income-tax paid from the salaries of employés at Jamshedpur	1,24,844	4	9
5. Expenditure at Jamshedpur on stamps . .	6,341	14	3
6. Expenditure at Jamshedpur on telegrams . .	13,696	10	0
7. Customs duty paid for Operation Department .	1,38,939	13	3
8. Customs duty paid for greater extensions . .	3,35,677	1	0
9. License fees paid for country liquor . . .	18,640	1	5
10. Cost price and duty paid for country liquor .	1,28,841	8	0
11. Port Commissioners' charges, etc., paid for greater extensions	59,354	11	0
12. Amount paid to Port Commissioners by the Calcutta Steam Navigation Co., Ld., on account of the Tata Iron and Steel Company, Limited (Operation Department), Jamshedpur, from April 1922 to March ending 1923 is .	1,80,590	0	0
TOTAL .	45,05,541	9	8

सत्यमेव जयते

STATEMENT No. XIX.

Depreciation as allowed by Income-tax Office. General Block as at 31st March 1922.

Fixed by Government of Bombay.	Rate per cent.	Value.			Total Depreciation.		
		Rs.	A.	P.	Rs.	A.	P.
Town Buildings . . .	2½	83,69,859	2	10	2,09,246	8	0
Town Sanitary Works . .	5	24,49,253	9	6	1,22,462	8	0
Ice and Aerated Water Factory .	6¼	55,550	7	6	3,472	0	0
Electric Light and Fan Installation.	7½	4,20,297	10	10	31,522	8	0
Ore Mines and Quarries.							
Machinery and Plant . .	5	5,76,239	7	3	28,812	0	0
Buildings	2½	1,61,576	10	6	4,039	8	0
Collieries.							
Machinery and Plant . .	10	1,11,21,005	9	6	11,12,100	8	0
Buildings	5	19,03,399	9	6	95,170	0	0
Works Construction.							
Machinery and Plant . .	7½	1,90,58,064	3	0	14,29,355	0	0
Buildings	5	42,09,148	13	9	2,10,457	8	0
Furniture	5	2,87,750	15	8	14,387	8	0
Live and Dead Stock.							
Motor Bus, etc. . . .	15	56,355	7	0	8,453	0	0
Live Stock, etc. . . .	5	33,482	14	0	1,674	0	0
TOTAL .	..	4,87,01,984	8	10	32,71,152	8	0

STATEMENT No. XX.

Statement showing works cost per ton of steel from 1912-13 to 1922-23.

DEPARTMENT.	1912-13.		1913-14.		1914-15.		1915-16.		1916-17.		1917-18.		1918-19.		1919-20.		1920-21.		1921-22.		1922-23.	
	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.	Rs.	As.
Open Hearth Ingots	69	10·82	54	9·59	45	10·59	42	12·24	41	2·12	45	1·72	58	14·45	53	7·13	65	7·69	68	13·12	72	8·00
Duplex Plant Ingots	..		..		..		..		..		..		..		..		..		..		97	10·24
Blooming Mill	87	4·78	68	3·62	56	3·25	53	2·81	49	15·21	54	5·83	71	11·49	65	2·45	79	0·80	83	10·72	89	1·76
28" Mill	147	2·08	94	1·89	82	1·83	78	0·71	75	2·76	82	2·03	107	2·46	93	14·49	112	1·63	116	0·00	125	1·12
Bar Mills	150	9·17	118	14·69	7	5·09	86	9·36	81	15·85	87	12·59	111	9·82	102	4·27	123	11·44	135	8·00	138	8·48
Plate Mill	..		..		..		..		..		..		..		..		..		..		145	13·44

STATEMENT No. XXI.

Statement showing Price, Royalty paid for the Collieries and the amount expended on Machinery and Equipment of the same up to 31st March 1922.

——	Purchase Price.			Machinery and Equipment.			Royalty and other Expenses.			TOTAL.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba.												
Colliery	33,00,000	0	0	48,39,610	12	9	..			76,39,610	12	9
Malkera-Choitodih.												
Colliery	7,13,000	0	0	26,83,907	12	5	..			33,96,907	12	5
Bhelatand.												
Colliery	1,38,000	0	0	10,78,447	1	4	..			12,16,447	1	4
Sijua.												
Colliery	25,00,000	0	0	14,60,601	8	2	..			39,60,601	8	2
Purshottampur.												
Colliery	1,40,360	0	0	9,61,831	15	2	..			11,02,191	15	2
Ovirampur.												
Colliery	1,42,520	0	0	..			16,587	2	5	1,59,107	2	5
Gunshadi.												
Colliery	21,000	0	0	..			20,877	13	3	41,877	13	3
Jarma.												
Colliery. (We do not hold this colliery at present. The sum expended was on prospecting, preliminary expenses, etc.)	..			..			7,658	1	8	7,658	1	8
Cassipur.												
Colliery. (We do not hold this property. The money spent was on preliminary inquiries, etc.)	..			..			585	2	6	585	2	6
TOTAL	69,54,880	0	0	1,05,24,399	1	10	45,708	3	10	1,75,24,987	5	8

STATEMENT No. XXII.

PIG IRON.

Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ld., for sale of Pig Iron.

Name of the Party.	Period of contract.	Quantity to be supplied.	Price per ton according to contract f. o. r. Tatanagar.	Wholesale market price per ton when contract made.	Quantity supplied in 1921-22.	Wholesale market price per ton in 1922-23 f. o. r. Jamshedpur.
1. Kumardhubi Engineering Works.	10 years from 1st January 1917 to 31st December 1926.	1,000 tons annually for ten years . 10,000 tons.	Rs. 50	Rs. 65	tons. 1,028	Rs. 60
2. Andrew Yule	10 years from 1st December 1916 to 30th November 1926.	1,200 tons for first 3 years annually. 1,500 tons further 3 years. 2,000 tons rest years. Total for 10 years 16,100 tons . .	53	65	1,807	60
3. Empire Engineering Company .	10 years from 1st March 1916 to 28th February 1926.	200 tons for 1st year. 500 tons for rest. Total 4,700 for 10 years . . .	57	60	411	60
4. Bengal Nagpur Railway . .	10 years from 1st December 1916 to 30th November 1926.	All requirements approximately 360 tons annually. For 10 years 3,600 tons . . .	50	65	455	60
5. Oudh and Rohilkhand Railway	10 years from 1st February 1917 to 31st January 1927.	All requirements approximately 3,000 tons annually. 30,000 tons for 10 years. . . .	49	65	3,320	60
6. North Western Railway . .	10 years from 1st January 1920 to 31st December 1929.	All requirements approximately 9,000 tons annually. 90,000 tons for 10 years . . .	58	85	5,788	60
7. Kawasaki Dockyard Company .	5 years from 1st January 1919 to 31st December 1923.	Total for 5 years 153,690 tons . .	Average price 64·20 (1).	85	27,320	60
8. Kobe Steel Works . . .	6 years from 1st January 1919 to 31st December 1924.	Total for 6 years 129,500 tons . .	Average price 83·00. (2)	85	23,053	60

N.B.—(1) £8 per ton = Rs. 80 per ton from 1st January 1919 to 30th June 1920 at average rate of exchange.
£6 „ = Rs. 79·44 per ton from 1st July 1920 to 30th June 1921 at average rate of exchange.
£4 „ = Rs. 60·792 per ton from 1st July 1921 to 31st December 1923 at average rate of exchange.

Average price 64·20

	Rs.
(2) January 1919 to March 1920 at	135 per ton.
April 1920 to June 1921 at	80 „
July 1921 to February 1922 at	95 „
March 1922 to December 1924 at	80 „
Average price . .	83·00 per ton.

NOTE.—This is not a reliable figure. India to-day, through the Bengal Iron Co., the Indian Iron & Steel Co., and ourselves, produces far more pig than she can consume, and we have seen pig exported this year at as low a price as Rs. 60 in quantities. Our all-in-cost has always been lower than any of the prices obtained from their contracts and they are all profitable.

STATEMENT No. XXIII.

RAILS AND FISHPLATES.

Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd. for the sale of rails.

1	2	3	4	5	6	7
Name of party.	Period of the contract.	Quantity to be supplied.	Price per ton according to contract f. o. r. Tatanagar.	Wholesale market price per ton when contract made.	Quantity supplied in 1921-22.	Wholesale market price per ton in 1922-23.
			Year 1915.			
1. Bengal Nagpur Railway	Five years 1st April 1920 to 31st March 1925.	15,000 tons with necessary fishplates annually. (14,422 rails and 578 fishplates.) Total 72,110 Rails. 2,890 Fishplates for 5 years.	Rs. 110 Rails . . 140 Fishplates .	Rs. 150-6 Rails . . 181·4 Fishplates . (From the 'Metal Bulletin' *plus* freight, insurance duty and landing charges.)	14,257 Rails . . 753 Fish plates.	Rs. 132 for Rails.*
			Year 1918.			
2. Bombay, Baroda and Central India Railway, Madras and Southern Mahratta Railway, Nizam's Guaranteed State Railway, Bengal and North-Western Railway, Burma Railways, Assam-Bengal Railway, Assam Railways and Trading Company.	Six years 1st April 1920 to 31st March 1926.	33,500 tons Rails annually. 1,460 tons Fishplates annually. 2,01,000 Rails. 8,760 Fish plates. Total for 6 years.	122-8 Rails . . 152-8 Fishplates .	Controlled prices. 194-12-8 Rails . . 264-1-7 Fish plates . (From the 'Ironmonger' Metal Market Year Book, 1918, *plus* freight, insurance, including duty and landing charges.)	25,026 Rails . . 1,598 Fishplates.	Rs. 132 for Rails.

* We are informed that the Bengal Nagpur Railway actually bought at this price in July 1922.

STATEMENT No. XXIII—*concluded.*

RAILS AND FISHPLATES—*concld.*

Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd., for the sale of rails—contd.

1	2	3	4	5	6	7
Name of party.	Period of the contract.	Quantity to be supplied.	Price per ton according to contract f. o. r. Tatanagar.	Wholesale market price per ton when contract made.	Quantity supplied in 1921-22.	Wholesale market price per ton in 1922-23.
			Year 1919.			
3. Railway Board . . .	Seven years 1st April 1920 to 31st March 1927.	3,00,000 tons rails and fishplates for the whole period. 2,88,460 Rails. 11,540 Fishplates.	Rs. 130 Rails . . 160 Fish plates. This was subsequently revised as follows :— For 1920-21—Rs. 180·22. For 1921-22—Rs. 158·8. For 1922-23—Rs. 156. For 1923-24—Rs. 156.	Rs. Controlled prices . 252-3-7 Rails . . 321-8-3 Fishplates. (From the 'Ironmonger' Metal Market Year Book 1919 including duty and landing charges.) *Controlled price by Indian Munitions Board.* In 1918 and 1919 the controlled price for rails in India was Rs. 150 per ton f. o. r. Tatanagar.	29,585 Rails . . 1,445 Fishplates.	Rs. 132 for Rails.*

* We are informed that the Bengal Nagpur Railway actually bought at this price in July 1922.

STATEMENT No. XXIV

COAL.

Statement of contracts for five years and over entered into by the Tata Iron and Steel Co., Ltd., for the purchase of Coal.

1	2	3	4	5	6	7	8
Name of the party from whom purchased.	Period of contract.	Quantity to be supplied.	Price per ton according to contract f.o.r. mines.	Market price per ton for similar coal at the time when contract was made.	Tonnage supplied during 1921-22.	Price per ton for 1921-22 according to the contract f.o.r. mines.	Wholesale Market price for 1921-22.
				Rs. A. P.		Rs. A. P.	Rs.
Raneegunge Coal Association Limited.	25 years from 1st April 1920 to 31st March 1945.	All output of 12, 13 and 15 Seams of Kustore and Alkusa Collieries, about 180/240,000. (45/60,00,000.)	Railway Board price *plus* 8 as. with a minimum of Rs. 3-12-0. (Rs. 4.)	4 8 0	203,496	6 8 0	12
Messrs. Andrew Yule & Co.	25 years from 1st April 1921 to 31st March 1946.	All output of 12 and 14 Seams of Ena, and 12, 14 and 15 Seams of Bhujuddih Collieries, about 132/288,000. (33/72,00,000.)	Railway Board price *plus* 8 as. with a minimum of Rs. 3-12-0. (Rs. 4.)	4 8 0	101,934	6 8 0	12
Messrs. Bird & Co. . .	25 years from 1st January 1921 to 31st December 1945.	240,000 (6,000,000)	Railway Board price, with a minimum of Rs. 3-12-0. (Rs. 3-12-0.)	4 8 0	125,850	6 0 0	12
Messrs. McLeod & Co. .	Till exhaustion of output from 30th January 1919.	All output of Gopalichuck and Bansjorah Collieries, about 1,20,000. (3,000,000). Nearly half the total output is second-class which is not consumed at Jamshedpur and therefore not included in this column.	Railway Board price (Rs. 3-8-0.)	4 8 0	72,768	6 0 0	12
				Price from the "Capital" for the month of December 1919.		Average price from the "Calcutta Prices Current and Money Market Reports" for the year 1921-22.	

STATEMENT No. XXV.

RAW MATERIALS (DOLOMITE, LIMESTONE, MANGANESE ORE, BRICKS).

Statement of contracts for five years and over for the purchase of raw materials.

	1	2	3	4	5	6	7	8
No.	Name of party from whom purchased.	Period of contract.	Name of material.	Quantity to be purchased.	Price according to contract.	Wholesale market price when contract was made.	Quantity purchased in 1921-22.	Wholesale market price in 1921-22.
1	Messrs. B. P. Byramji & Co.	10 years from 1st July 1921.	Dolomite . .	36,000 minimum . 60,000 maximum per year. Total— 360,000 minimum. 600,000 maximum.	Rs. 3 per ton loaded into wagons on the Railway.	No information	available.	..
2	The Bisra Stone Lime Company, Limited.	25 years from 1st October 1923 to 30th September 1948.	Dolomite . .	25,000 tons per annum.	Rs. 4 per ton f. o. r. Railway wagon.	No information	available.	..
3	Ditto .	Ditto .	Limestone . .	24,000 tons 1st year 100,200 tons per year thereafter. Total 24,28,800 tons.	Rs. 3 per ton f. o. r. Railway wagon.	No information	available.	..
4	The Central Provinces Prospecting Synd.	10 years from 1918 to 1927.	Manganese . .	60,000 to 90,000 tons per year. Total 600,000 to 900,000 tons.	Rs. 9-12-0 per ton at the mines.	No information	available.	..
5	The Reliance Firebrick and Pottery Co., Ltd.	10 years from 1st January 1920 to 31st December 1929.	Firebricks . .	Estimated at 48 lacs bricks annually. Total about 480 lacs bricks.	Rs. 75 per thousand bricks f. o. r. Chanch maximum. Rs. 50 per thousand bricks minimum. Variations on the basis of pig iron quotations in England.	No information	available.	..

STATEMENT No. XXVI.

Statement showing the tonnage for Operation Department handled by the B. N. R. under freight agreement with them.

	Tons.	Gross weight.		Net freight.		Rebate.	
		Rs.	As.	Rs.	As.	Rs.	As.
From April 1918 to March 1919 . . .	1,371,276	33,88,284	14	16,06,998	3	17,81,286	11
" " 1919 " " 1920 . . .	1,640,261	42,06,105	0	20,94,018	12	21,12,086	4
" " 1920 " " 1921 . . .	1,464,367	36,66,030	15	16,18,013	0	20,48,017	15
" " 1921 " " 1922 . . .	1,624,230	42,45,790	0	17,27,461	0	25,18,329	0
" " 1922 " " 1923 . . .	1,748,452	62,73,590	5	20,17,520	6	42,56,069	15

The gross freight shewn above would be the normal freight. The rebate is the saving to the Company.

STATEMENT No. XXVII.

Average f.o.b. prices of Cleveland Pig Iron No. 3 as on the 1st day of each month for the years 1912-13, 1913-14, 1920-21 to 1922-23.

	1912-13. *Sh.*	1913-14. *Sh.*	1920-21. *Sh.*	1921-22. *Sh.*	1922-23. *Sh.*
April	52	67	200	150	90
May	54	67	200	120	90
June	54	59	217	120	90
July	58	55	217	120	90
August	59	55	217	120	88
September . . .	64	56	225	120	87
October	67	54	225	120	93
November . . .	67	51	225	110	93
December . . .	67	49	225	100	93
January	68	50	225	100	92
February . . .	65	51	195	90	..
March	63	50	150	90	..
Average for the year *Sh.* .	61·5	55·33	210·083	113·3	90·6

STATEMENT No. XXVIII.

Statement showing the average selling price per ton of Pig Iron *realised by the Tata Iron and Steel Company for Ordinary Sale and Contract Sale separately for the years 1912-13, 1913-14 and 1919-20 to 1922-23.*

Year.	Ordinary Sale.			Contract Sale.		
	Rs.	A.	P.	Rs.	A.	P.
April 1912 to March 1913	58	0	0	46	0	0
„ 1913 „ 1914	64	0	0	50	0	0
„ 1919 „ 1920	99	12	0	87	4	0
„ 1920 „ 1921	115	10	0	80	2	0
„ 1921 „ 1922	109	14	0	85	3	0
„ 1922 „ 1923	73	14	0	69	13	0

STATEMENT No. XXIX.

Statement showing the average selling price per ton of Big and Bar Mill *materials realised by the Tata Iron and Steel Company during the years 1912-13 and 1913-14.*

Period.	Rails.		Structurals.		Fishplates.	
	Ordinary Sale.	Contract Sale.	Ordinary Sale.	Contract Sale.	Ordinary Sale.	Contract Sale.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
April 1912 to March 1913.	112 0 0	90 0 0	113 0 0	103 0 0	..	..
April 1913 to March 1914.	106 0 0	106 0 0	122 0 0	109 0 0	..	123 0 0

STATEMENT No. XXX.

Statement showing the c. i. f. quotations on various dates in 1919 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Date of Cable.	Rails.	Beams.	Bars.	Cleveland Pig Iron No. 3.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
2nd April 1919 . . .	17 19 6	18 17 0	19 19 9	9 13 9
9th May 1919 . . .	17 15 0	19 15 0	20 0 0	9 13 0
7th July 1919 . . .	18 15 0	20 0 0	21 0 0	10 13 9
3rd September 1919 . .	19 0 0	20 7 6	22 15 0	10 10 0
2nd October 1919 . . .	19 2 6	20 7 6	22 15 0	10 10 0
3rd November 1919 . .	19 2 6	20 7 6	22 15 0	10 13 9
1st December 1919 . .	19 2 6	20 10 0	23 15 0	10 11 6
AVERAGE .	18 13 10	20 0 8	21 17 1	10 6 6

STATEMENT No. XXXI.

Statement showing the c.i.f. quotations on various dates in 1920 received from the London Office of the Tata Iron and Steel Company for Rails Beams, Bars and Cleveland Pig Iron.

Date of Cable.	Rails			Beams.			Bars.			Cleveland Pig Iron No. 3.		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
1st January 1920	20	5	0	21	15	0	24	15	0	10	15	0
2nd February 1920	21	10	0	23	15	0	25	15	0	11	6	3
2nd March 1920	22	10	0	25	10	0	27	15	0	11	6	3
6th April 1920	24	0	0	30	0	0	32	5	0	12	11	6
3rd May 1920	26	10	0	31	0	0	32	6	0	12	11	6
1st June 1920	27	10	0	34	15	6	37	10	0	13	11	6
1st July 1920	27	10	0	34	15	6	37	10	0	13	11	6
4th August 1920	29	10	0	34	15	6	37	10	0	..		
1st September 1920	29	10	0	34	15	6	37	10	0	..		
AVERAGE	25	8	0	30	2	5	32	8	4	12	4	9

STATEMENT No. XXXII.

Statement showing the c.i.f. quotations on various dates in 1921 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Date of Cable.	Rails.			Beams.			Bars.			Cleveland Pig Iron No. 3.		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
1st January 1921	29	10	6	28	15	0	32	0	0	14	16	6
1st February 1921	27	10	0	25	15	0	27	10	0	13	9	0
1st March 1921	23	0	0	22	5	0	22	0	0	9	19	0
2nd April 1921	20	0	0	18	5	0	18	10	0	9	14	0
1st May 1921	15	0	0	17	5	0	17	0	0	7	19	0
2nd June 1921	15	0	0	16	15	0	17	0	0	7	19	0
7th July 1921	15	0	0	16	5	0	16	10	0	7	19	0
6th August 1921	11	15	0	14	10	0	14	5	0	8	5	0
13th September 1921	11	5	0	13	10	0	13	5	0	8	0	0
17th November 1921	11	0	0	13	0	0	13	5	0	7	0	0
17th November 1921	11	0	0	13	0	0	13	5	0	7	5	0
16th December 1921	11	0	0	12	10	0	12	5	0	6	15	0
AVERAGE	16	15	0	17	13	0	18	2	1	9	1	8

STATEMENT No. XXXIII.

Statement showing the c.i.f. quotations on various dates in 1922 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Date of Cable.	Rails.	Beams.	Bars.	Cleveland Pig Iron No. 3.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12th April 1922 . . .	10 0 0	10 17 0	11 0 0	5 15 0
12th April 1922 . . .	10 0 0	10 17 0	11 0 0	5 15 0
16th June 1922 . . .	10 0 0	10 17 0	11 0 0	5 15 0
14th June 1922 . . .	10 0 0	10 17 0	11 0 0	5 15 0
15th July 1922 . . .	9 15 0	10 12 0	10 15 0	5 15 0
3rd August 1922 . . .	9 17 6	10 12 0	10 15 0	5 12 6
10th October 1922 . .	9 10 0	10 0 0	10 10 0	5 12 0
10th October 1922 . .	9 2 6	10 0 0	10 0 0	5 17 6
AVERAGE .	9 15 7	10 11 6	10 15 0	5 14 7

STATEMENT No. XXXIV.

Statement showing the c.i.f. quotations on various dates in 1923 received from the London Office of the Tata Iron and Steel Company for Rails, Beams, Bars and Cleveland Pig Iron.

Date of Cable.	Rails.	Beams.	Bars.	Cleveland Pig Iron No. 3.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
19th March 1923 . . .	11 0 0	11 10 0	11 15 0	7 12 6
1st June 1923 . . .	11 7 0	11 1 6	11 7 0	7 4 3
4th July 1923 . . .	11 7 0	10 16 6	11 2 0	6 16 9
1st August 1923 . . .	10 7 6	10 11 6	10 17 0	6 9 3
5th October 1923 . .	9 12 0	10 1 6	10 7 0	6 0 3
AVERAGE .	10 14 8	10 16 2	11 1 7	6 16 7

STATEMENT No. XXXV.

Statement showing the total cost in the year 1921-22 of coking and other coal landed at Works in Jamshedpur and the cost of labour employed at Jamshedpur other than labour in the Town Department or on the Greater Extensions.

With reference to your letter No. 613, dated Bombay the 28th November 1923, we beg to give the following information as requested :—

(1) The total cost of coking coal landed at Works in the year 1921-22 is Rs. 34,32,263.

(2) The total cost of gas coal Rs. 9,45,512.

(3) The total cost of steam ,, Rs. 13,27,221.

(4) The cost of all labour employed at Jamshedpur other than labour employed in the Town Department or on the Greater Extensions, but including such labour as is ordinarily shown in the cost accounts under the head "service expenses" Rs. 69,25,033.

STATEMENT No. XXXVI.

Statement showing the average prices of coal paid by the Tata Iron and Steel Co. f. o. r. colliery per ton for the years 1912-13, 1913-11 and 1919-20 to 1922-23.

	f. o. r. Price own collieries.			f. o. r. Price outside collieries.			Aver. f. o. r. Price all collieries.		
COKING COAL.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1912-13	2	3	0	1	15	11	2	0	0
1913-14	2	4	0	2	9	4	2	9	2
1919-20	3	11	8	2	15	0	3	3	7
1920-21	5	13	9	4	6	3	4	15	1
1921-22	5	15	9	6	12	6	6	8	11
1922-23	5	7	10	9	0	4	7	10	4
STEAM COAL.									
1912-13	2	4	11	3	2	3	2	8	9
1913-14	2	8	0	2	13	6	2	11	11
1919-20	3	7	11	3	13	1	3	10	1
1920-21	5	14	0	4	7	1	4	15	0
1921-22	5	12	4	7	4	7	6	9	11
1922-23	5	4	5	9	1	1	7	9	5
GAS COAL.									
1912-13	2	4	0	3	9	11	3	9	1
1913-14	2	4	0	3	14	9	3	14	7
1919-20	4	0	2	4	5	6	4	5	6
1920-21	5	9	11	4	9	5	4	12	6
1921-22	8	9	6	5	8	1	5	13	11
1922-23	7	2	0	8	9	3	8	2	11

Average price increased owing to receipts of coal from Purushottampur Colliery .

STATEMENT No. XXXVII.

Statement showing the average selling price per ton of big mill materials under contract and by ordinary sale for the years 1919-20 to 1922-23.

Year.	Rails.						Structurals.					
	Ordinary sale.			Contract sale.			Ordinary sale.			Contract sale.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
April 1919 to March 1920	150	0	0	150	5	0	282	2	0	223	1	0
April 1920-1921	155	8	0	153	15	0	279	1	0	264	3	0
April 1921-March 1922	143	9	0	136	3	0	251	12	0	211	6	0
April 1922-March 1923	116	11	0	135	8	0	169	10	0	151	7	0

STATEMENT No. XXXVIII.

Statement showing the average selling price per ton of bar mill materials under contract and by ordinary sale for the years 1919-20 to 1922-23.

Period.	Rails.						Structurals.						Fishplates.					
	Ordinary Sale.			Contract Sale.			Ordinary Sale.			Contract Sale.			Ordinary Sale.			Contract Sale.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
April 1919 to March 1920	246	0	0	200	0	0	300	0	0	271	0	0	..			182	0	0
April 1920 to March 1921.	195	0	0	327	0	0	280	0	0	303	0	0	214	0	0	195	0	0
April 1921 to March 1922.	210	0	0	198	0	0	310	0	0	232	0	0	192	0	0	164	0	0
April 1922 to March 1923.	150	0	0	140	0	0	177	0	0	163	0	0	178	0	0	165	0	0

STATEMENT No. XXXIX.

Statement showing particulars regarding Collieries.

Name of property purchased.	Date of purchase.	Amount of purchase price.
		Rs.
Bhelatand	11th March 1910 . . .	1,38,000
Malkera-Choitodih . . .	12th June 1913 . . .	7,13,000
Jamadoba	1st January 1917 . . .	33,00,000
Sijua	17th February 1918 . .	25,00,000
Purushottampur . . .	11th September 1918 . .	1,40,360
Ovirampore	June 1917	1,42,520
Gunshadi	....	2,000

Output from different Collieries.

	Bhelatand.	Malkera-Choitodih.	Jamadoba.	Sijua.	Purushottampur.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
January to December 1912 .	53,679	..	..	..	..	53,679
January to December 1913 .	50,256	..	..	..	..	50,256
January to December 1914 .	38,058	..	..	..	..	38,058
January to December 1915 .	48,078	59,615	..	..	..	1,07,693
January to December 1916 .	46,243	79,878	..	..	..	1,26,121
January to June 1917 .	19,826	22,363	1,30,688	..	..	1,72,877
July 17 to June 1918 . .	24,601	45,859	2,71,126	44,129	..	3,85,715
July 18 to March 1919 . .	18,648	40,575	2,52,604	1,36,564	..	4,48,391
April 19 to March 1920 . .	28,265	63,527	3,11,196	1,58,646	..	5,56,634
April 20 to March 1921 . .	22,171	40,052	2,28,965	79,506	..	3,71,294
April 21 to March 1922 . .	12,368	49,752	2,52,983	93,215	8,580	4,16,898
April 22 to March 1923 . .	included in Sijua.	90,019	2,60,770	1,46,819	16,847	5,14,485

STATEMENT No. XL.

Statement showing Royalty payable on the various Collieries.

The rate of royalty for different collieries is as follows :—

	Rs.	A.	P.		
Bhelatand	0	4	6	per ton on	all coal.
	0	8	0	,,	,, coke.
Malkera-Choitodih	0	4	0	,,	,, coal.
JAMADOBA GROUP—					
1. Jamadoba 2. Sirguja	0	3	0	,,	steam and coke rubble
3. Bhutgoria	0	2	0		and slack.
4. Jorapukur	0	3	0	,,	all coal.
5. Dongri Pattya	0	5	0	,,	steam and rubble.
	0	10	0	,,	coke.
	0	2	6	,,	slack and dust.
Sijua	0	6	0	,,	all coal.
Gansadih	0	4	0	,,	steam.
	0	2	0	,,	rubble, slack and
	0	6	0	,,	burnt coal coke.
Purushottampur	0	4	0	,,	steam, rubble, slack
	0	1	0		and dust fireclay.
	0	6	0	,,	coke.
Ovirampur	0	5	0	,,	steam
	0	4	0	,,	rubble.
	0	2	0	,,	dust.
	0	6	3	,,	coke.

STATEMENT No. XLI.

Statement showing the value (i.e., the actual cost for machinery, etc.) of the machinery and plant at the colliery at the end of each financial year from 1912-13 to 1922-23.

COLLIERY DEPARTMENT AS AT 30TH JUNE 1913.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bhelatand	1,37,118	7	0	4,13,146	10	0	59,257	10	3
Malkera-Choitodih	7,12,334	12	6	766	9	0	..		
New Coal Property	37,012	4	0	..			..		
Guneshadi Coal Property	24,173	3	6	..			..		
	9,10,638	11	0	4,13,913	3	0	59,257	10	3

Summary.

	Rs.	A.	P.
Properties	9,10,638	11	0
Machinery and Plant	4,13,913	3	0
Buildings	59,257	10	3
	13,83,809	8	3

COLLIERY DEPARTMENT AS AT 30TH JUNE 1914.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bhelatand	1,37,118	7	0	4,16,201	0	5	65,164	14	3
Malkera-Choitodih	7,12,334	12	6	5,61,518	9	11	19,223	13	0
New Coal Property	61,455	15	3	..			..		
Guneshadi Coal Property	26,301	3	6	..			..		
Jarma	620	14	0	..			..		
	9,37,831	4	3	9,77,719	10	4	84,388	11	3

Summary.

	Rs.	A.	P.
Properties	9,37,831	4	3
Plant and Machinery	9,77,719	10	4
Buildings	84,388	11	3
	19,99,939	9	10

COLLIERY DEPARTMENT AS AT 30TH JUNE 1915.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bhelatand	1,37,118	7	0	4,40,838	7	1	67,400	14	9
Malkera-Choitodih	7,12,334	12	6	9,86,594	12	11	1,17,215	5	4
New Coal Property	61,455	15	3	..			..		
Guneshadi Coal Property	28,429	3	6	..			..		
Jarma	620	14	0	..			..		
	9,39,959	4	3	14,27,433	4	0	1,84,616	4	1

Summary.

	Rs.	A.	P.
Properties	9,39,959	4	3
Machinery and Plant	14,27,433	4	0
Buildings	1,84,616	4	1
	25,52,008	12	4

COLLIERY DEPARTMENT AS AT 30TH JUNE 1916.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bhelatand	1,37,118	7	0	4,42,566	10	4	67,400	14	9
Malkera-Choitodih . . .	7,12,334	12	6	11,96,159	5	6	1,27,442	11	10
Jarma	704	13	6	..			..		
Guneshadi Coal Property .	30,557	3	6	..			..		
	8,80,715	4	6	16,38,725	15	10	1,94,843	10	7

Summary.

	Rs	A.	P.
Properties	8,80,715	4	6
Machinery and Plant	16,38,725	15	10
Buildings	1,94,843	10	7
	27,14,284	14	11

COLLIERY DEPARTMENT AS AT 30TH JUNE 1917.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,60,972	3	2	19,18,936	0	2	3,01,676	10	9
Bhelatand	1,37,118	7	0	4,13,829	8	8	1,16,940	9	9
Malkera-Choitodih . . .	7,12,334	12	6	13,76,349	11	4	1,27,282	4	7
Ovirampur	94,520	12	9	..			..		
Malkera-Choitodih . . .	..			4,328	1	3	..		
Bhelatand	..			2,013	15	11	..		
Guneshadi	32,685	3	6	..			..		
Cossipur	585	2	6	..			..		
Jarma	704	13	6	..			..		
	21,38,921	6	11	37,15,457	5	4	5,45,899	9	1

Summary.

	Rs.	A.	P.
Properties	21,38,921	6	11
Machinery and Plant	37,15,457	5	4
Buildings	5,45,899	9	1
	64,00,278	5	4

COLLIERY DEPARTMENT AS AT 30TH JUNE 1918.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,60,972	3	2	23,52,392	14	4	4,08,542	9	10
Bhelatand	1,37,118	7	0	5,86,628	1	7	1,33,025	0	0
Malkera-Choitodih . . .	7,12,334	12	6	16,02,941	5	0	2,13,041	10	3
Purushottampur	74,944	11	5	37,255	9	6	1,012	4	6
Ovirampur	1,40,376	2	8	..			..		
Sijua	16,51,678	8	6	7,67,528	0	0	2,17,841	15	0
	38,77,424	13	3	53,46,745	14	5	9,73,463	7	7

Summary.

	Rs.	A.	P.
Properties	38,77,424	13	3
Machinery and Plant	53,46,745	14	5
Buildings	9,73,463	7	7
	1,01,97,634	3	3

COLLIERY DEPARTMENT AS AT 31ST MARCH 1919.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,60,671	15	2	28,58,817	7	6	4,55,340	5	4
Bhelatand	1,37,118	7	0	7,30,062	2	11	1,35,174	2	6
Malkera-Choitodih . . .	7,12,334	12	6	18,20,826	3	3	2,49,229	9	9
Purushottampur	2,24,910	0	5	83,008	7	6	17,431	9	9
Ovirampur	1,44,116	4	8	..			..		
Sijua	16,51,678	8	6	10,71,066	2	10	2,91,348	10	9
Jarma	7,411	7	8	..			..		
Guneshadi	35,345	3	6	..			..		
Cossipur	585	2	6	..			..		
	40,74,171	13	11	65,63,780	8	0	11,48,524	6	1

Summary.

	Rs.	A.	P.
Properties	40,74,171	13	11
Machinery and Plant	65,63,780	8	0
Buildings	11,48,524	6	1
	1,17,86,476	12	0

COLLIERY DEPARTMENT AS AT 31ST MARCH 1920.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,67,432	5	2	35,91,875	0	9	6,59,778	14	5
Bhelatand	1,37,118	7	0	9,17,372	14	7	1,58,969	6	9
Sijua	21,18,100	8	4	9,77,767	7	7	2,91,348	10	9
Malkera-Choitodih . . .	7,12,334	12	6	20,55,290	12	1	2,93,925	12	6
Oviranpur	1,46,516	4	8	..			..		
Guneshadi	37,626	3	3	..			..		
Jarma Coal Property . .	7,422	1	8	..			..		
Cossipur	585	2	6	..			..		
Purushottampur	1,37,000	0	0	4,05,542	10	8	82,448	12	6
	44,64,135	13	1	79,47,848	13	8	14,86,471	8	11

Summary.

	Rs.	A.	P.
Properties	44,64,135	13	1
Machinery and Plant	79,47,848	13	8
Buildings	14,86,471	8	11
	1,38,98,456	3	8

COLLIERY DEPARTMENT AS AT 31ST MARCH 1921.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,67,432	5	2	43,68,451	6	1	7,80,935	11	3
Malkera-Choitodih . . .	7,12,334	12	6	23,31,045	4	8	3,00,133	6	0
Bhelatand	1,37,118	7	0	9,19,087	15	7	1,60,240	10	9
Sijua	21,18,100	8	4	12,85,001	2	4	3,66,674	0	0
Purushottampur	1,37,000	0	0	6,33,317	1	4	1,33,637	14	0
Ovirampur	1,48,916	4	8	..			..		
Jarma	7,642	1	8	..			..		
Guneshadi	39,749	13	3	..			..		
Cossipur	585	2	6	..			..		
General (Motor Car) . .	..			500	0	0	..		
	44,68,879	7	1	95,37,402	14	0	17,41,621	10	0

Summary.

	Rs.	A.	P.
Properties	44,68,879	7	1
Machinery and Plant	95,37,402	14	0
Buildings	17,41,621	10	0
	1,57,47,903	15	1

COLLIERY DEPARTMENT AS AT 31ST MARCH 1922.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,78,149	2	9	55,87,306	9	9	8,64,447	9	3
Bhelatand	1,37,118	7	0	9,19,087	15	7	1,60,240	10	9
Sijua	21,18,100	8	4	14,70,683	5	7	3,71,817	10	3
Malkera-Choitodih	7,12,334	12	6	23,84,439	9	11	3,00,133	6	0
Purushottampur	1,45,651	0	3	7,49,780	9	8	2,06,760	5	3
Cossipur	585	2	6	..			..		
Ovirampur	1,59,107	2	5	..			..		
Guneshadi	41,877	13	3	..			..		
Jarma	7,658	1	8	..			..		
General (Motor Car)	..			9,707	7	0	..		
	45,00,582	2	8	1,11,21,005	9	6	19,03,399	9	6

Summary.

	Rs.	A.	P.
Properties	45,00,582	2	8
Machinery and Plant	1,11,21,005	9	6
Buildings	19,03,399	9	6
	1,75,24,987	5	8

COLLIERY DEPARTMENT AS AT 31ST MARCH 1923.

	Properties.			Machinery and Plant.			Buildings.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Jamadoba	11,79,683	3	9	65,07,823	7	10	9,16,986	6	6
Bhelatand	1,37,118	7	0	9,19,087	15	7	1,60,240	10	9
Sijua	21,18,100	8	4	16,30,516	2	7	3,71,817	10	3
Malkera-Choitodih	7,12,334	12	6	23,84,439	9	11	3,00,133	6	0
				1,52,043	2	9			
				25,36,482	12	8			
Purushottampur	1,47,232	5	6	8,44,696	10	7	2,35,230	5	0
Cossipur	585	2	6	..			..		
Ovirampur	1,62,027	15	10	..			..		
Guneshadi	44,005	13	3	..			..		
Jarma	7,658	1	8	..			..		
General (Motor Car)	..			9,707	7	0	..		
	45,08,746	6	4	1,24,48,314	8	3	19,84,408	6	6

Summary.

	Rs.	A.	P.
Properties	45,08,746	6	4
Machinery and Plant	1,24,48,314	8	3
Buildings	19,84,408	6	6
	1,89,41,469	5	1

STATEMENT No. XLII.

Statement showing estimated raising cost per ton after development of Collieries.

	Rs.	A.	P.		Rs.	A.	P.	
Jamadoba	3	8	0	to	3	12	0	per ton.
Sijua	3	4	0	to	3	12	0	,,
Purushottampur	3	12	0	per ton.				
Malkera-Choitodih	3	12	0	,,				

STATEMENT No. XLIII.

Statement showing estimated monthly outturn after development of Collieries and the estimated additional capital expenditure (after 31st March 1923) necessary to secure that output.

	Estimated Output.	Estimated additional capital expenditure.
	Tons.	Rs.
Jamadoba	87,000	11,00,000
Sijua	57,000	29,50,000
Purushottampur	16,000	4,00,000
Malkera-Choitodih	10,000	2,00,000

सत्यमेव जयते

STATEMENT No. XLIV.

Statement showing the actual average cost per ton of raising coal excluding overhead charges.

	Bhelatand.	Malkera-Choito-dih.	Jamadoba.	Sijua.	Purushottam-pur.	REMARKS.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
January 1912 to December 1912 .	2 2 8	..	..	..	..	
,, 1913 to ,, 1913 .	2 14 1	..	..	..	..	
,, 1914 to ,, 1914 .	2 12 2	..	..	..	..	
,, 1915 to ,, 1915 .	2 5 9	2 0 5	..	..	..	
,, 1916 to ,, 1916 .	3 3 0	2 7 10	..	..	..	
,, 1917 to June 1917 . .	3 3 0·18	4 10 6·37	2 7 3·68	..	..	
July 1917 to June 1918 . .	3 9 0·26	5 14 8·83	2 13 0·67	2 14 2·90*	..	From February 1918.
,, 1918 to March 1919 . .	3 1 8·76	4 4 11·11	2 10 0·08	2 12 11·38	..	
April 1919 to ,, 1920 . .	2 14 11·56	3 8 7·32	2 15 3·75	3 2 7·74	..	
,, 1920 to ,, 1921 . .	4 1 11·64	6 6 4·35	4 8 9·58	5 10 0·64	5 3 0·46†	† From March 1921 only.
,, 1921 to ,, 1922 . .	5 11 7·80	6 2 7·64	4 11 7·51	5 11 11·67	11 15 8·91	
,, 1922 to ,, 1923 . .	..	4 14 8·77	4 7 8·17	4 14 4·35	7 13 8·71	

STATEMENT No. XLV.

Statement showing the consumption of coal in the works at Jamshedpur from 1916-17 to 1922-23.

——	Coking.	Gas.	Steam.	Miscellaneous.	Total coal used.
	Tons.	Tons.	Tons.	Tons.	Tons.
1916-17	314,674	87,160	61,866	19,291	472,991
1917-18	341,576	109,968	84,802	11,513	547,859
1918-19	330,041	94,080	73,460	10,177	507,758
1919-20	475,359	116,037	84,534	16,126	692,056
1920-21	531,750	134,821	102,271	22,192	791,034
1921-22	485,812	137,788	106,352	16,842	746,794
1922-23	491,515	129,331	127,104	22,046	769,996

STATEMENT No. XLVI.

Statement showing the estimated requirements of coal by the Tata Iron and Steel Company for each year up to the time when the Greater Extensions are in full operation.

1923-24.

220,000 tons per year	Coking Coal.
200,000 „	Gas Coal.
250,000 „	Steam coal.

STATEMENT No. XLVII.

Statement showing the total quantity of coal purchased in each year from outside collieries under contract and the average price per ton f. o. r. colliery, for the years 1916-17 to 1922-23.

Year.	Quantity.	Average price per ton.
	Tons.	Rs. A. P.
July 1916 to June 1917	438,905	2 5 11
„ 1917 to „ 1918	448,093	3 4 6
„ 1918 to March 1919	299,240	*3 9 6
April 1919 to „ 1920	419,572	3 7 2
„ 1920 to „ 1921	457,837	4 7 3
„ 1921 to „ 1922	507,266	6 9 10
„ 1922 to „ 1923	570,958	8 15 5

* NOTE.—During this year a special arrangement existed with Andrew Yule & Co., for supply of Coal at Rs. 7 per ton owing to shortage of Gas Rubble, which had to be substituted with Deoli Steam Coal.

STATEMENT NO. XLVIII.

Statement showing the quantities of coal actually sold by the Tata Iron and Steel Company from their own collieries to the outside Customers and the prices realised, from 1st January 1917 to 31st March 1923.

—	Jamadoba Average.			Sijua Average.		
	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.
		Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.
For half-year ended 30th June 1917	115,365	3 8 3	4,05,289 7 3	..	..	..
For year ended 30th June 1917	145,936	3 6 2	4,93,734 6 3	15,706	3 8 2	55,131 5 0
For 9 months ended 31st March 1919 . . .	48,758	3 12 4	1,84,030 5 0	10,490	7 3 1	75,450 7 4
For year ended 31st March 1920	43,528	4 4 9	1,87,033 10 3	1,988	6 14 2	13,685 6 6
For year ended 31st March 1921	303,608	7 13 4	23,78,177 13 6	36,078	9 3 0	3,31,552 10 6
For year ended 31st March 1922	192,184	8 6 2	16,11,252 9 0	57,356	8 7 11	4,87,352 2 6
For year ended 31st March 1923	83,960	9 4 3	7,78,094 12 3	4,550	8 15 1	4,06,971 13 0

STATEMENT NO. XLVIII—*contd.*

Statement showing the quantities of coal actually sold by the Tata Iron and Steel Company, from their own collieries to the outside Customers and the prices realised from 1st January 1917 to 31st March 1923—contd.

—	MALKERA-CHOITODIH AVERAGE.			BHELATAND AVERAGE.			PURUSOTTAMPUR AVERAGE.		
	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.	Tons.	Rate.	Amount.
		Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.
For half-year ended 30th June 1917.	13,695	3 6 3	46,412 12 6	1,141	3 13 7	4,691 6 0	..	..	..
For year ended 30th June 1917.	1,182	3 8 9	4,197 11 6	6,696	3 7 3	23,112 4 6	..	..	..
For 9 months ended 31st March 1919.	669	3 10 0	2,425 13 0	7,427	3 2 11	23,639 9 9	..	..	..
For year ended 31st March 1920.	370	3 13 7	1,423 13 0	1,052	4 0 3	4,223 0 6	..	..	..
For year ended 31st March 1921.	199	3 13 7	766 11 6	2,083	3 15 11	8,317 14 0	..	..	..
For year ended 31st March 1922.	4,223	10 12 5	45,525 1 0	796	3 14 11	3,128 0 9	149	14 15 4	2,229 3 5
For year ended 31st March 1923.	787	3 13 0	3,000 14 0	..	..	..	1,118	6 6 3	7,210 11 9

STATEMENT NO. XLIX.

Statements showing the expenditure on the Greater Extensions at the end of each year from 1916-17 to 1922-23.

(*a*) DISTRIBUTION OF GREATER EXTENSION CAPITAL EXPENDITURE.

—	As at 30th June 1917.			As at 30th June 1918.			As at 31st March 1919.			As at 31st March 1920.			As at 31st March 1921.			As at 31st March 1922.			As at 31st March 1923.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1. Plant and Machinery Buildings, and Foundations for housing plant, etc., at Jamshedpur.	10,11,652	1	7	1,08,37,300	7	1	2,29,588,43	6	1	3,59,89,782	8	7	6,01,94,143	1	2	8,78,68,193	2	7	10,66,01,161	15	1
2. Water System and Drainage.	5,543	2	0	2,44,152	15	7	7,01,675	0	10	11,06,692	4	8	16,18,216	1	8	31,58,773	1	2	42,02,050	13	8
3. Machinery and Plant at Mines and Quarries	..			79,783	0	6	3,02,745	12	5	4,64 004	14	0	7,96,307	6	9	14,01,307	5	8	16,88,237	13	8
4. Buildings at Jamshedpur	5,130	12	7	77,348	2	2	2,23,407	0	9	7,85,445	7	5	9,56,276	1	8	14,44,654	14	0	17,56,236	14	7
5. Buildings at Mines	..			4,148	4	7	10,025	11	9	40,842	9	2	82,372	14	6	1,16,721	11	10	1,47,517	13	1
6. Other expenditure to be distributed after construction is over.	34,298	0	6	8,52,632	5	0	18,30,405	6	1	36,43,159	11	6	57,76,056	5	3	9,22,577	15	3	1,14,76,047	2	10
7. Interest to be distributed after construction is over.	..			3,25,000	0	0	7,35,000	0	0	20,37,000	0	0	31,37,000	0	0	35,37,000	0	0	39 97,000	0	0
TOTAL RUPEES	10,56,625	0	8	1,24,20,365	8	11	2,67,62,302	5	11	4,41,59,017	7	4	7,25,60,371	15	0	10,67,48,228	2	6	12,98,68,252	8	6

(*b*) GREATER EXTENSIONS CAPITAL EXPENDITURE.

——	Expenditure to June 1917.			Expenditure to June 1918.			Expenditure to March 1919.			Expenditure to March 1920.			Expenditure to March 1921.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
General Expense	34,281	6	0	6,76,936	3	3	14,66,464	11	3	30,10,794	8	10	47,05,973	5	4
Construction Tools	955	7	2	1,46,515	3	8	2,94,403	13	6	5,43,841	12	9	8,70,312	14	4
Site	16	10	6	1,14,674	4	10	2,84,438	1	4	4,59,719	12	7	8,66,523	6	7
Coke Plant	99,845	8	6	6,73,194	11	10	17,47,708	1	1	46,31,890	14	6	65,86,517	15	4
Blast Furnace 'C' and 'D'	1,51,547	9	11	17,89,566	10	6	36,80,063	10	7	54,34,180	2	10	73,26,482	15	2
Pig Casting Machine	..			3,853	3	0	10,913	5	0	11,206	8	3	13,968	9	7
Mixer and Converter Plant	77,325	14	8	1,73,968	11	11	6,54,370	9	7	7,55,160	3	0	12,70,126	15	3
Open Hearth Plant	4,186	8	11	1,06,032	10	1	8,97,747	7	3	22,42,635	2	8	61,85,938	10	0
Electric Furnaces	..			..			..			...			..		
Sheet Bar and Billet Mill	1,32,038	5	2	6,29,952	3	6	11,93,746	11	6	14,24,647	5	3	26,22,219	10	9
Plate Mill	18,577	9	7	3,70,280	7	1	16,03,810	1	11	40,01,114	14	4	62,22,362	15	7
Sheet Mill	13,573	13	3	2,95,144	9	5	7,24,077	0	8	14,24,823	10	4	38,06,543	4	9
Merchant Mill	..			4,35,067	7	9	8,33,869	7	10	13,94,106	11	5	19,84,564	15	1
Wire Mill	..			..			1,14,392	7	4	1,24,209	8	1	1,24,209	8	1

(b) GREATER EXTENSIONS CAPITAL EXPENDITURE—*continued.*

—	Expenditure to March 1922.			Expenditure to March 1923.			Balance to complete.			REMARKS.
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
General Expense	70,74,348	3	10	87,06,738	0	5	11,23,360	0	0	
Construction Tools	11,82,976	15	11	14,27,480	7	7	1,14,000	0	0	
Site	19,40,196	15	10	25,53,402	13	9	3,50,000	0	0	This includes Fencing the works.
Coke Plant	89,51,106	3	4	1,03,67,064	5	5	11,00,000	0	0	Completed by January 1923.
Blast Furnace 'C' and 'D'	1,10,04,454	6	1	1,34,52,712	11	0	6,50,000	0	0	Expenses April to September Rs. 7,05,948 2 10.
Pig Casting Machines	4,03,728	1	9	4,74,544	9	5	24,000	0	0	Completed December 1922.
Mixer and Converter Plant	21,31,238	7	7	26,04,752	13	1	6,50,000	0	0	Completed January 1923.
Open Hearth Plant	86,86,391	2	3	1,18,93,511	3	9	10,35,000	0	0	Completed by January 1923.
Electric Furnaces	..			..			2,53,260	0	0	
Sheet Bar and Billet Mill	37,24,263	8	1	45,76,790	7	8	1,86,000	0	0	Completed.
Plate Mill	67,40,039	5	8	67,37,729	4	9	20,000	0	0	
Sheet Mill	53,18,962	3	11	59,49,475	2	9	16,00,000	0	0	
Merchant Mill	29,67,888	0	7	36,26,526	13	4	12,30,000	0	0	
Wire Mill	74,209	8	1	12,067	5	8*	100	0	0	Sold.

* *Vide* Statement No. L.

—	Expenditure to June 1917.			Expenditure to June 1918.			Expenditure to March 1919.			Expenditure to March 1920.			Expenditure to March 1921.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Bolt and Nut Shop	..			14,705	2	6	1,00,674	5	1	1,22,129	2	2	1,24,098	5	3
Stock Yard for Mills	..			6,796	2	4	23,720	6	1	67,490	8	0	4,22,425	2	11
Shipping Building	..			6,725	0	10	21,958	14	10	63,315	7	10	64,199	9	7
Roll Shop	..			84,220	11	8	1,92,871	11	1	3,03,129	4	9	3,28,049	3	1
Structural Shop	5,441	2	3	77,344	12	8	2,67,450	4	11	5,40,116	12	6	6,75,376	8	9
Machine Shop No. 2	2,88,193	3	6	17,43,541	13	4	25,31,069	4	7	28,58,667	15	7	31,10,031	13	6
Pattern Shop	1,19,328	15	6	1,19,328	15	6	..			..			238	8	0
General Foundry	..			36,638	14	9	1,02,274	9	10	1,04,840	6	9	1,42,181	6	1
Forge Shop	7,221	6	0	43,966	14	7	43,154	3	3	81,489	3	4	83,203	12	1
Sleeper Press	..						..			..			1,43,848	14	0
Electric Power	49,901	3	6	4,37,898	15	1	9,04,067	2	0	12,19,393	5	8	25,47,722	13	2
Water System	5,543	2	0	2,02,248	4	2	6,21,443	13	1	10,74,041	4	5	13,64,571	10	0
Coke Ovens Gas Mains	..			6,153	0	2	24,191	6	11	1,13,281	12	4	1,33,668	6	4
Drainage	..			41,904	11	5	80,339	10	6	1,18,255	15	3	2,47,349	6	8
Track System	39,622	8	2	2,35,518	3	3	5,44,146	12	9	6,93,950	2	11	11,63,348	12	9
Rolling Stock	..			..			4,89,563	4	11	12,45,466	9	11	19,84,247	2	6

—	Expenditure to March 1922.			Expenditure to March 1923.			Balance to complete.			REMARKS.
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Bolt and Nut Shop	1,27,713	8	1	1,28,433	0	11	..			
Stock Yard for Mills	6,91,110	12	2	7,75,046	8	6	50,000	0	0	
Shipping Building	..			..		*	..			
Roll Shop	3,34,568	1	0	3,90,982	5	9	1,70,000	0	0	
Structural Shop	7,00,133	1	3	7,14,199	10	4	3,300	0	0	Completed.
Machine Shop No. 2	32,64,647	7	2	32,43,470	11	2	10,000	0	0	
Pattern Shop	238	8	0	238	8	0*	..			Completed.
General Foundry	1,50,922	5	3	1,28,562	4	3*	..			Completed.
Forge Shop	83,306	5	0	85,366	3	11	..			Completed.
Sleeper Press	2,53,621	5	8	2,53,686	8	4	1,50,000	0	0	
Electric Power	35,62,794	2	11	48,03,180	14	7	19,00,000	0	0	
Water System	27,09,905	7	8	35,46,584	5	4	19,50,000	0	0	
Coke Ovens Gas Mains	1,88,714	15	1	2,71,307	6	7	80,000	0	0	
Drainage	4,42,472	8	6	6,49,071	6	11	75,000	0	0	
Track System	17,44,304	2	5	21,13,433	3	9	8,00,000	0	0	
Rolling Stock	32,16,718	12	3	30,75,772	1	6*	50,000	0	0	

* *Vide* Statement No. L.

	Expenditure to June 1917.			Expenditure to June 1918.			Expenditure to March 1919.			Expenditure to March 1920.			Expenditure to March 1921.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Office Building	..			66,810	13	5	2,08,445	5	2	7,65,168	8	2	9,30,243	14	7
Town	..			137	0	0	2,664	14	9	..			..		
Iron Ore Mines	..			39,598	1	9	1,29,778	15	7	2,50,884	1	2	2,81,226	9	0
Dolomite Quarries	..			44,333	9	4	1,82,992	8	7	2,51.603	10	7	3,82,433	13	0
Batelle Furnace	..			27,97,058	8	0	30,67,600	11	10	36,64,355	12	8	37,93,476	2	11
O. H. Extension Furnace No. 7	..			33,951	5	9	..			..			..		
Crane Runaway Extension	..			16,058	11	11	16,301	5	2	16.301	5	2	16,301	5	2
Machine Shop No. 1 Extension	..			42,061	0	9	70,771	5	0	72.406	8	1	72,406	8	1
Greater Extensions Office Building	5,130	12	7	10,537	4	9	14,961	11	7	20.276	15	3	26.032	3	1
Bending Rolls	3,893	13	6	3,893	13	6	..			..			..		
Excavations	..			60,884	12	11	76,646	6	8	86,645	5	9	87,206	2	3
Cranes	..			4,48,417	9	10	16,24,261	3	3	..			..		
Erection Nut and Bolt Header	..			1,203	5	6	1,282	10	10	1,282	10	10	1,282	10	10
Jessop's Shop	..			54,706	2	7	73,105	2	8	85,607	4	1	86,512	1	3
Jessop & Co. Power House	..			3,535	3	10	3,686	10	1	3,686	10	1	3,686	10	1
Interest account	..			3,25,000	0	0	7,35,000	0	0	20,37 000	0	0	31,37,000	0	0

—	Expenditure to March 1922.			Expenditure to March 1923.			Balance to complete.			REMARKS.
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Office Building	14,18,612	4	3	17,30,194	4	10	4,500	0	0	Completed.
Town	..			..			..			
Iron Ore Mines	2,98,288	7	10	3,10,735	1	7	..			
Dolomite Quarries	4,77,965	7	5	5,49,069	13	8	8,000	0	0	
Batelle Furnace	38,06,250	7	5	38,60,750	14	3	5,000	0	0	Completed.
O. H. Extension Furnace No. 7	..			..		*	..			
Crane Runaway Extension	16,301	5	2	16,301	5	2	..			Completed.
Machine Shop No. 1 Extension	72,406	8	1	84,406	8	1	..			Completed.
Greater Extensions Office Building	26,042	9	9	26,042	9	9	..			Demolished.
Bending Rolls	..			..		*	..			
Excavations	87,206	2	3	87,206	2	3	..			
Cranes	..			..		*	..			
Erection Nut and Bolt Header	1,282	10	10	1,282	10	10	..			Completed.
Jessop's Shop	1,70,218	0	10	1,70,215	13	8	50,000	0	0	Cost of Removal Still to spend.
Jessop & Co. Power House	3,686	10	1	3,686	10	1	..			
Interest account	35,37,000	0	0	39,97,000	0	0	..			

* *Vide* Statement No. L.

—	Expenditure to June 1917.	Expenditure to June 1918.	Expenditure to March 1919.			Expenditure to March 1920.			Expenditure to March 1921.		
			Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Furnace 'F'	..	..	2,102	4	9	2,102	4	9	2,102	4	9
Subsidiary Company	..	..	191	4	1	506	1	4	7,964	6	3
Drag Ovens	..	..	3,34,142	5	0	7,43,100	9	6	7,45,569	1	6
Sanitation	..	..	91	9	3	6,395	1	0	6,295	1	0
Soaking Pit Extensions	..	..	1,43,375	11	8	2,27,040	5	5	2,21,675	4	8
Blooming Mill	..	..	1,38,964	1	6	10,53,906	13	7	61,15,799	0	1
5000 KW Generator in H. P. No. 1	..	..	4,61,272	11	10	5,76,608	5	10	6,26,938	7	11
100 KW Generator in H. P. No. 1	..	..	21,732	0	0	21,768	14	4	21,768	14	4
Jute Mill Subsidiary	..	..	..			85,493	15	0	1,08,389	0	10
Fire Brick Plant	..	..	..			15,754	15	1	15,754	15	1
Badampahar Iron Ore Mines	..	..	..			2,449	11	5	2,12,019	15	3
Benzol Plant	..	..	..			84,242	11	11	1,01,118	7	11
Refrigerating Plant	..	..	..			529	12	1	39,056	2	6
Boiler Plant No. 4	..	..	..			..			3,87,806	4	2
Sulaiput Iron Ore Mines	..	..	..			..			..		
Jamda Iron Ore Mines	..	..	..			..			..		

—	Expenditure to March 1922.			Expenditure to March 1923.			Balance to complete.			REMARKS.
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Furnace 'F'	2,102	4	9	2,102	4	9	..			Excavation only.
Subsidiary Company	76,290	7	5	85,104	0	6	500	0	0	
Drag Ovens	7,46,879	1	4	7,49,179	1	7	100	0	0	Completed.
Sanitation	6,395	1	0	6,395	1	0	..			
Soaking Pit Extensions	2,28,889	13	0	2,28,889	13	0	..			Completed.
Blooming Mill	1,35,66,976	11	1	2,00,39,847	11	2*	34,50,000	0	0	
5000 KW Generator in H. P. No. 1	6,26,900	2	5	6,27,891	7	11	500	0	0	Completed.
100 KW Generator in H. P.	21,768	14	4	21,768	14	4	..			Completed.
Jute Mill Subsidiary	43,536	1	11	43,536	1	11*	..			
Fire Brick Plant	15,754	15	1	15,754	15	1	..			
Badampahar Iron Ore Mines	5,38,313	13	10	7,02,749	9	9	50,000	0	0	
Benzol Plant	93,746	9	3	1,03,563	14	5	..			
Refrigerating Plant	1,34,972	3	2	1,35,134	15	10	..			
Boiler Plant No. 4	24,35,069	1	1	26,63,816	4	1	2,00,000	0	0	
Sulaiput Iron Ore Mines	1,94,178	7	4	12,50,415	2	8	..			
Jamda Iron Ore Mines	7,825	11	10	121,323	13	10	7,88,300	0	0	Name changed to Noamundi Iron Ore Mines.

* *Vide* Statement No. L.

	Expenditure to June 1917.			Expenditure to June 1918.			Expenditure to March 1919.			Expenditure to March 1920			Expenditure to March 1921.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Gomadi Dolomite Quarries	..			..			..			..			..		
Steam Mains	..			..			..			..			..		
Sulphuric Acid Plant	..			..			..			..			..		
Jamadoba Electric Machinery	..			..			..			..			..		
Boiler Plant No. 5	..			..			..			..			..		
Sulphuric Acid Plant No. 2	..			..			..			..			..		
No. 2 " K " Lease dolomite quarries	..			..			..			..			..		
TOTAL	10,56,625	0	8	1,24,20,365	8	11	2,67,62,302	5	11	4,41,59,017	7	4	7,25,60,371	15	0

	Expenditure to March 1922.			Expenditure to March 1923.			Balance to complete.			REMARKS.
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	
Gomadi Dolomite Quarries	1,459	1	3	1,459	1	3	..			
Steam Mains	76,655	6	11	1,74,448	0	4	75,000	0	0	
Sulphuric Acid Plant	1,86,462	6	5	3,39,466	6	10	1,00,000	0	0	
Jamadoba Electric Machinery	1,57,818	9	10	1,63,356	8	6	..			
Boiler Plant No. 5	..			21,091	11	6	57,000	0	0	
Sulphuric Acid Plant No. 2	..			96,005	15	0	3,60,000	0	0	
No. 2 " K " Lease dolomite quarries	..						1,89,500	0	0	
TOTAL	10,67,48,228	2	6	12,98,68,252	6	6	..			

(c) *Explanations regarding items marked by a cross (×) in the Statement showing capital expenditure on greater extensions.*

Wire Mill.- The amount shown under the "Expenditure to March 1923" column should be a credit amount made up as follows :—

	Rs.	A.	P.
The cost of the mill was	1,24,209	8	1
To which should be added the cost of cleaning the machinery and replacing missing or broken parts .	3,026	8	4
Making a total of	1,27,236	0	5

The Steel Company recovered from the Indian Steel Wire Products Limited Rs. 1,39,303-6-1 and this leaves a credit balance of Rs. 12,067-5-8 being interest collected from the purchasers, which should be set off against the interest debit shown later.

Shipping Building.—The expenditure shown in 1923 column of Rs. 64,199-9-7 covered the cost of cranes ordered for departmental shipping buildings, but which was afterwards transferred by Perin and Marshall to the various departments which the cranes were serving.

Machine Shop No. 2.—The reduction in 1923 column was caused by the transfer by Perin and Marshall of certain crane parts for Cranes 2898 and 2912 which had been originally ordered for the No. 2 Machine Shop, but which were afterwards transferred to the Calcining Plant.

Pattern Shop.—The cost of the Pattern Shop was transferred to the Operation Department on completion of the job, and the only amount now standing in the books is Rs. 238-8-0 made up of sundry shipping charges transferred from Suspense Account on receipt of information from the Shipping Agents in Calcutta.

General Foundry.—The reduction in 1923 column is caused by the transfer of one steel stack made by Wm. B. Pollock Co. to Boiler Plant No. 5. This transfer was authorised by Perin and Marshall to avoid the purchase of a stack for the Boiler plant.

Rolling Stock.—The reduction in the 1923 column is caused by the transfer to various departments of the cost of Truck parts, wheels, Axles, etc. for Cinder Cars, Quenching cars, Hydraulic Jack cars, and Larry cars which were originally authorised by Perin and Marshall to be charged to the Rolling Stock account, and as the parts were used, the cost of the same would be made against the various departments using the parts.

Open Hearth furnace extension No —7 Furnace.—The cost of this work was originally intended to be kept in the Greater Extensions books, but this was changed and it was finally kept in the Operation books. The amount shown in the 1918 column was transferred to the Operation Department, so that the whole cost of the job would be in one set of books.

Bending Rolls.—As it was not known at first into which department those rolls would be put, the charges were kept under the heading of Bending Rolls. When the Rolls were erected at the Blacksmith Shop, all charges were billed out to the Operation Department.

Cranes.—The cost of all the cranes ordered from Alliance Machine Company was kept under one account, "Cranes Account," as the allocations could not be made until the order was complete and the Alliance Machine Company sent us the cost for their various Shop Orders. When this was done, the amount standing on our books was written off against the various departments served by the different cranes.

Jute Mill Subsidiary.—The amount of Rs. 1,08,389-0-10 in 1921 column was the cost of a Transmission line erected to serve the Calcutta Monifieth Co. in its proposed first location. This location was afterwards changed, and most of the cable, etc., was returned to stores or used on other jobs. The amount now standing on the Steel Company's books represents the cost of labour erecting poles and also the cost of the poles now standing *plus* cost of small stores which could not be used again, it having been estimated that it would cost too much in the meantime to take those poles down and haul them to where they could be stored until required

STATEMENT NO. L.

Letter from the Tata Iron and Steel Co., Ltd., dated 8th January 1924, explaining certain items of expenditures for 'Blooming Mill,' 28" Mill, etc.

In reply to your letter No. 30 of the 5th January, we beg to inform you that the expenditure for the new 28" Mill has been included in the figures for the Blooming Mill. Out of the final total of about Rs. 235 lakhs for the Blooming Mill and 28" Mill the approximate amount for each mill is as follows :—

	Rs.
Blooming mill and Soaking Pits	86,30,500
28" Mill	1,38,25,600
Roll Shops and Reheating Furnace	10,33,800
	2,34,89,000

सत्यमेव जयते

With reference to the President's enquiry regarding the discrepancy between the figure of about Rs. 235 lakhs (cost of Blooming Mill) as shown in the Statement sent with our letter of the 28th December 1923 and Rs. 1,82,42,800 (cost of 28" Mill) as shown in the Statement sent with our letter dated 31st December 1923 from Calcutta, we beg to explain that the estimated capital expenditure of Rs. 235 lakhs is the amount both for Blooming Mill and 28" Mill ; (Blooming Mill Rs. 86,30,500 and 28" Mill (1,38,25,600). As regards the cost of 28" Mill, there seems to be a difference between the figures of Rs. 1,82,42,800 and Rs. 1,38,25,600. This could be explained as follows : in the figure of Rs. 1,82,42,800 items for interest, supervision and spares are included, whereas in the figure of Rs. 1,38,25,600 they are not, because these three items are shown separately in the Statement. If the amount for the three items be excluded from Rs. 1,82,42,800, the result would come to Rs. 1,38,25,600.

Trusting that the above explanation is clear.

STATEMENT NO. LI.

Statement showing labour force, production, etc. for years 1915-16 and 1921-22.

Year.	Production.	Direct labour.	Tonnage per head per annum.
	Tons.	No.	
Coke Ovens—			
1915-16	202,055	869	232
1921-22	377,236 (359,923 actual *plus* 17,313 for 3 months for Drag Ovens).	2,234	169
Blast Furnace—			
1915-16	171,453	1,065	161
1921-22	283,190	1,512	187
Open Hearth Ingots—			
1915-16	123,427	942	131
1921-22	182,107	1,191	153
Blooming Mill—			
1915-16	108,104	196	551
1921-22	156,902	283	554
28" *Mill—*			
1915-16 Prod.	67,707		
Billets rolled	3,884	825	87
	71,591		
1921-22—Prod	96,273		
Billets rolled	12,348		
2nd cl. rails	11,443	1,287	93
	120,064		
Bar Mill—			
1915-16	23,293	674	34
1921-22	29,598	828	36

सत्यमेव जयते

Number of men shown in the attached Statement for 1915-16 will not tally with the figures given in the statement sent to the Board on 14th December 1923.

We had added the following men in order to compare with the number of men in 1921-22 due to change of system.

—	Figures of 1915-16 as per statement of 14th December 1923.	Addition in order to compare with 1921-22.	TOTAL.
Coke Ovens	804	65	869
Blast Furnaces	747	318	1,065
Blooming Mill	183	13	196
28" Mill	657	168	825
Bar Mill	534	140	674
Open Hearth	942	..	942

STATEMENT NO. LII.

*Estimated cost of production of coke when Greater Extensions are completed and are working.**

		Coppee Ovens.	Koppers Ovens.	Willputte Ovens.
Total production	tons	186,200	125,000	467,300
Average per month	,,	15,517	10,417	38,942
Yield	per cent	72·89%	73·88%	73·88%
Cost of Coal	Rs.	8-0-0	8-0-0	8-0-0
Cost of coal per ton of coke	,,	10-15·6	10-13·2	10-13·2
Labour	,,	1-7·0	1-8·0	1-0·0
Stores Tools and Supplies	,,	8·0	5·6	8·0
Steam		..	..	..
Service expenses	,,	1-5·5	1-2·5	9·0
		14-4·1	13-13·3	12-14·2
Deduct profit on B-Products—				
Gas		..	4·5	4·5
Coal Tar		..	6·5	6·5
Sulphate		..	8·2	8·2
		..	1-3·2	1-3·2
		14-4·1	12-10·1	11-11·0

Average cost of all coke = 12·453 Rs. per ton or Rs. 12-7·248 per ton.

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT NO. LIII.

*Estimated cost of production of Sulphuric Acid when Greater Extensions are completed and are working.**

ESTIMATED COST 1927-1928.

Total production	Tons	16,000
Average per month	„	1,333
Cost per ton Sulphur	Rs.	192-12-0
Cost per ton Nitrate of Soda	„	353-8-0
Cost of Acid—		
Sulphur	„	55-11-0
Nitrate of Soda	„	6-12-7
Labour	„	6-3-9
Stores, Tools and Supplies	„	7-12-9
Service cost	„	3-6-6
		79-15-1

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT NO. LIV.

*Estimated cost of production of Sulphate of Ammonia when Greater Extensions are completed and are working.**

Total production	Tons	8,000
Average per month	„	667
Sulphuric Acid	Rs.	98-14-2
Lime	„	9-4
Bags	„	9-11-1
Labour	„	7-8-1
Tools and Supplies	„	2-8-6
Steam	„	1-14-1
Service expenses	„	5-14-0
Average cost per ton	Rs.	126-15-5

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LV.

*Estimated cost of production of Coal Tar when Greater Extensions are completed and are working.**

Production	Tons	18,000
Average per month	„	15,000
Labour	Rs.	2-8-8
Tools and Supplies	„	1-8-8
Steam	„	4-4
Service expenses	„	1-7-0
Average cost per ton	Rs.	5-13-0

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT NO. LVI.

*Estimated cost of production of Pig Iron when Greater Extensions are completed and are working.**

Total production (excluding Ferro)	Tons	610,200
Average per month	,,	50,850
Cost of Iron Ore	Rs.	3-5·0
Cost of Manganese Ore	,,	17-1·0
Cost of Coke	,,	12-7·25
Cost of dolomite	,,	5-0·0
Yield	per cent	61·01
Used per ton of Pig—		
Iron Ore	lbs.	3,596
Manganese Ore		69
Scrap		6
Coke		2,700
Dolomite		1,500
Iron Ore	Rs.	5-5·1
Manganese Ore	,,	8·4
Scrap	,,	1·0
	,,	5-14·5
Coke	,,	15-0·1
Flux	,,	3-5·6
	,,	24-4·2
Labour	,,	2-4·0
Tools and Supplies	,,	12·0
Refractories	,,	3·0
Steam	,,	1-8·0
Service expenses	,,	2-0·0
Relining	,,	12·0
	,,	31-11·2
Gas Cr.	,,	12·0
Average cost per ton	,,	30-15·2

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LVII.

*Estimated cost of production of Steel Ingots when Greater Extensions are completed and are working.**

		Stationary Open Hearth Furnaces. Tons.	Duplex Process. Tons.
Production, Annual	..	210,000	360,000
Average per month	..	17,500	30,000
Cost of Pig	30-15·2		
Cost of Scrap	20-3·2		
Cost of Guru : Ore	3-5·0		
Cost of Manga. Ore	17-1·0		
Cost of Ferro Mn.	121-15·0		
Cost of ,, Seli	606-8·3		
Cost of Limestone	6-7·2		
Cost of Lime	22-6·5		
Cost of Finor Spar	90-10·8		

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

85% Yield.

	Rs.
Lbs. of Pig used 55% =1,425 lbs.	19-11·0
Lbs. of Scrap used 45% =1,167 lbs	10-8·4
	30-3·4
Less Scrap Cr.	1-5·4
Nett Metal Cost	28-14·0
Feeding Materials	4-4·7
Labour	5-7·2
Stores	2-6·6
Refractories	2-0·0
Ingot Moulds and Stools	1-4·0
Relining Fund	7-8·0
Gas Producers	5-5·5
Service Expenses	3-12·0
Average Cost per ton of Ingots	60-14·0

Blown Metal.

Pig used 2,503 lbs. 30-15·2	34-9·3
Less Scrap 63 lbs. @ 20	9·0
Nett Metal Cost	34·0·3
Feeding Materials	..
Labour	14·1
Stores	1-11·5
Refractories	1-3·4
Ingot Moulds and Stools	*Nil.*
Relining Fund	..
Blowing Metal	13·7
Service Expenses	1-2·3
Average cost per ton of Blown Metal	39·13·3
Average cost of all Ingots	58-8·0

सत्यमेव जयते

Ingots.

Blown Metal 2358 lbs. @ 39-13·3	41-14·9
Less Scrap 71 lbs. @ 20	10·1
Nett Metal Cost	41-4·8
Feeding Materials	3-8·2
Labour	1-0·8
Stores	1-5·9
Refractories	1-13·1
Ingot Moulds and Stools	1-4·0
Relining Fund	2-4·0
Gas Producers	2-9·4
Service Expenses	1-15·6
Average cost per ton of Ingots	57-1·8

STATEMENT No. LVIII.

*Estimated cost of production of New and Old Blooming Mill when Greater Extensions are completed and are working.**

		New Blooming Mill.	Old Blooming Mill.
Annual Production	Tons	380,800	88,300
Monthly Production	,,	31,733	7,358
Yield	Per cent.	88·0	88·0
Average Cost of Ingots	Rs.	58 8·0	58 8·0
Gross Cost of Metal	,,	66 7·7	66 7·7
Less Scrap	,,	2 0·8	2 0·8
Nett Metal Cost	,,	64 6·9	64 6·9
Labour	,,	1 0·0	1 11·5
Stores Tools and Supplies . . .	,,	0 12·0	1 6·4
Steam and Electricity	,,	1 10·0	2 0 0
Gas	,,	..	1 4·8
Rolls	,,	0 4·0	0 4·0
Service Cost	,,	0 12·0	1 4 6
Average Cost per ton of Blooming Mill product.	,,	68 12·9	72 6·2
Average Cost over all Blooms . . .	,,	69 7·7	..

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LIX.

*Estimated cost of production of New and Old 28″ Rail Mills when Greater Extensions are completed and are working.**

——		New 28″ Mill.	Old 28″ Mill.
Annual Production	Tons	175,000	60,000
Average per month	„	14,583	5,000
Yield	Per cent.	85·00	85·00
Average Cost of Blooms	Rs.	69 7·7	69 7·7
Gross Cost of Metal	„	81 13·5	81 13·5
Less Scrap and Billets	„	2 6·4	2 6·4
Nett Metal Cost	„	79 7·1	79 7·1
Labour	„	5 2·0	7 11·1
Stores Tools and Supplies	„	1 15·0	2 15·0
Steam	„	..	3 2·7
Gas Producers	„	2 2·7	1 2·7
Rolls	„	2 0·0	2 0·0
Service Cost	„	3 0·2	4 8·3
Average Cost of 28″ Mill product	„	93 11·0	100 14·9
Average Cost per ton on New and Old 28″ Mill.	„	95 8·6	..

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LX.

*Estimated cost of production of 24″ and 18″ Mills when Greater Extension are completed and are working.**

Estimated Annual Production	Tons.	154,000
Estimated monthly production	„	12.833
Yield	Per cent.	93·5
Average Cost of Blooms	Rs.	69 7·7
Gross Cost of Metal	„	74 5·0
Less Cr. Scrap 5·0 % @ Rs. 20, Scale and waste 1·5 %.	„	1 0·0
Nett Metal Cost	„	73 5·0
Labour	„	1 8·0
Stores Tools and Supplies	„	1 4·0
Power	„	3 0·0
Rolls	„	1 0·0
Service Expenses	„	0 12·0
Average Cost per ton	„	80 13·0

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay

STATEMENT No. LXI.

*Estimated cost of production of New Merchant Mill and Old Bar Mill when Greater Extensions are completed and are working.**

——		New Merchant Mill.	Old Bar Mill.
Production	Tons.	43,900	18,000
Average per month	„	3,658	1,500
Yield	Per cent.	90	85
Average Cost of Billets	Rs.	75 15·7	75 15·7
Gross Cost of Metal	„	84 6·7	89 6·2
Less Scrap, etc.	„	1 6·4	2 6·4
Nett Metal Cost	„	83 0·3	86 15·8
Labour	„	6 7·0	13 12·0
Stores Tools and Supplies	„	4 8·0	6 6·0
Steam	„	2 4·0	4 3·9
Gas Producers	„	3 8·0	4 10·2
Rolls	„	3 0·0	3 0·0
Service Charge	„	4 0·0	6 1·4
Average Cost per ton	„	106 11·3	125 1·3
Average Cost per ton	„	112 0·8	..

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LXII.

*Estimated cost of production of Plate Mill when Greater Extensions are completed and are working.**

Estimated Annual Production	Tons.	48,000	
,, monthly production	,,	4,000	
Cost of Slabs	Rs.	69	7·7
Yield	Per cent.		68·4
Gross Cost of Metal	Rs.	101	9·3
Less Scrap 28% @ Rs. 20, 3·6 % Scale and waste	,,	5	9·6
Nett Metal Cost	,,	95	15·7
Labour Cost	,,	10	0·2
Heating Coke Oven Gas	,,	1	8·0
Power	,,	1	12·0
Stores Tools and Supplies	,,	3	7·2
Rolls Account	,,	2	4·0
Service Expenses	,,	5	9·5
Average Cost per ton	,,	120	8·6

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

STATEMENT No. LXIII.

*Estimated cost of production of Sheet Mill Production when Greater Extensions are completed and are working.**

Estimated Annual production	Tons.	36,000	
,, monthly production	,,	3,000	
Yield	Per cent.		80
Sheet Bar	Rs.	80	13·0
Gross Cost of Metal	,,	101	0·3
Scrap 17 % @ Rs. 20, 3 % waste	,,	3	6·4
Nett Metal Cost	,,	97	9·9
Labour	,,	21	0·7
Heating	,,	2	8·0
Power	,,	5	4·0
Stores Tools and Supplies	,,	7	0·0
Rolls Account	,,	5	0·0
Service Expenses	,,	7	4·2
Annealing { 2 0 0 } Boxes and Bottoms { 1 8 0 } Fuel	,,	3	8·0
Total Cost Black and Cold Sheets	,,	149	2·8
Loss in pickling 43 lbs. @ 151-11-7	,,	2	14·6
Galvanizing—			
Sulphuric Acid 90 lbs. @ Rs, 79-15·1	,,	3	3·4
Spelter 198 lbs. @ 3 annas per lb.	,,	37	2·0
Labour, etc.	,,	2	0·0
		45	4·0
Total Cost—Galvanised Sheets	,,	194	6·8

---

* Taking 1921-22 prices for coal and other materials at prices we expect to pay.

सत्यमेव जयते

STATEMENT No. LXIV.

Statement showing the comparison of Blast Furnace Department cost for the years 1916-17 and 1921-22.

Particulars.	1916-17			1921-22			REMARKS.
	Rate.	Per ton lbs. used.	Cost per ton.	Rate.	Per ton lbs. used.	Cost per ton.	
	Rs. A. P.		Rs A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Iron Ore	1 13 11	3,526	2 15·10	2 13 0	3,596	4 8·16	
Manganese Ore	13 9 7	35	0 3·43	15 13 0	69	0 7·84	
Scrap	20 0 0	21	0 2·99	20 0 0	6	0 0·96	
Scale	1 8 0		0 0·31	...	...	...	
Coke	6 2 8	2,749	7 9·03	13 10 1	2,954	17 15·52	
Dolomite	3 5 9	1,226	1 13·44	5 2 6	1,427	3 4·64	
	..		12 12·30	..	..	26 5·12	
Fuel for miscellaneous purposes	..	..	..	..	..	0 0·16	
TOTAL LABOUR	...	..	19·85	9·85	..	2 12·000	

STATEMENT No. LXIV—*continued.*

Statement showing the comparison of Blast and Furnace Department cost for the years 1916-17 and 1921-22—continued.

Particulars.	1916-17.			1921-22.			REMARKS.
	Rate.	Per ton lbs. used.	Cost per ton.	Rate	Per ton lbs. used.	Cost per ton.	
Miscellaneous.—			Rs. A.			Rs. A.	
Steam	..	..	0 14·18	..	..	1 12·00	
Refractories (Ladle Repairs included)	..	..	0 2·19	..	..	0 3·20	
Yard Switching	..	..	0 7·67	..	..	0 15·20	
General Works	..	..	0 12·33	..	..	0 12·16	
Contingent Fund	..	..	0 3·04	..	..	0 3·68	
Relining Fund	..	..	0 12·00	..	..	0 12·00	
Other Charges	..	..	1 5·10	..	..	1 8·00	
TOTAL	..	..	18 14·66	..	..	35 3·52	
Credit Gas	..	..	0 5·96	..	..	0 12·00	
			18 8·70	..	..	34 7·52	
Yield	..	..	62·52%	..	..	61·01%	

STATEMENT No. LXV.

Statement showing the comparison of Open Hearth Department costs for the years 1916-17 and 1921-22.

	1916-17.			1921-22.			REMARKS.
	Rate.	Per ton lbs.	Cost per ton.	Rate.	Per ton lbs.	Cost per ton.	
	Rs. A. P.		Rs. A.	Rs. A. P.		Rs. A.	
Pig	18 10 0	1,694	14 1·12	34 7 0	1,882	28 14·40	
Scrap	20 0 0	680	6 1·16	..	611	5 8·96	
			20 2·28	..	..	34 7·36	
Credit	..	..	3·44	..	..	1 9·12	
			19 14·84	..	..	32 14·24	
Raw Materials	..	..	3 4·41	..	..	2 12·00	
TOTAL METALLIC MIXTURE	..	..	23 3·25	..	..	35 10·24	
Flux:—							
(a) Limestone	5 13 6	166	0 6·94	6 7 2	357	1 0·48	
(b) Other Flux	..	..	0 6·16	..	..	0 12·00	
Moulds and Stools	..	..	0 15·42	..	..	1 4·00	
Fuel	..	..	2 9·68	..	..	6 0·64	
Gas Producers	..	..	..	..	..	2·24	
TOTAL	..	..	4 6·20	..	..	9 3·36	

STATEMENT No. LXV—*continued.*

Statement showing the comparison of Open Hearth Department costs for the years 1916-17 and 1921-22—continued.

Particulars.	1916-17.			1921-22.			REMARKS.
	Rate.	Per ton lbs.	Cost per ton.	Rate.	Per ton lbs.	Cost per ton.	
	Rs. A. P.		Rs. A.	Rs A. P.		Rs. A.	
Labour	..	..	4 4·87	..	..	6 4·48	
Tools, Lubricating and Supplies	..	..	1 4·73	..	..	2 12·32	
Refractories	..	..	15·33	..	..	2 15·68	
General Works Expenses	..	..	10·73	..	..	2 4·32	
Contingent Fund	..	..	7·77	..	..	0 11·68	
Furnace Relining Fund	..	..	5 0·00	..	..	7 8·00	
Miscellaneous	..	..	13·24	..	..	1 7·04	
TOTAL	..	..	13 8·67	..	..	23 15·52	
TOTAL WORKS COST	..	..	41 2·12	..	..	68 13·12	
Yield	..	..	94·35%	..	..	83·86%	

STATEMENT No. LXVI.

Statement showing the comparison of Blooming Mill Department costs for the years 1916-17 and 1921-22.

	1916-17.			1921-22.			REMARKS.
	Rate.	Per ton lbs.	Cost per ton.	Rate.	Per ton lbs.	Cost per ton.	
	Rs. A. P.		Rs. A.	Rs. A. P.		Rs. A.	
Steel Ingots	40 15 8	2,557	46 12·20	68 13·7	2,528	77 11·36	
Less Scrap Produced	20 0 0	..	2 6·18	20 0 0	224	2 0·00	
			44 6·02	..	..	75 11·36	
Fuel :—							
Gas Producers	..	..	0 12·84	..	..	1 4·80	
Labour	..	..	1 5·37	..	..	1 11·52	
Materials	..	..	1 8·66	..	..	1 6·40	
Steam	..	..	12·77	..	..	2 0·00	
General Works Expense	..	..	5·21	..	..	10·40	
Contingent Fund	..	..	2·58	..	..	2·88	
Rolls Account	..	..	4·00	..	..	4·00	
Miscellaneous	..	..	5·76	..	..	7·36	
TOTAL	..	..	49 15·21	..	..	83 10·72	
Yield	..	..	87·64%		..	88·60%	

STATEMENT No. LXVII.

Statement showing comparison of 28" Mill costs for 1916-17 and 1921-22.

		1916-17.	1921-22.
Total Production	Tons	69,000	96,000
Materials per ton	lbs.	2,851	2,547
Yield	per cent	78·58	81·31
Cost per ton	Rs.	75 3·0	116 0·0
Steel Blooms—			
2,851 lbs. at Rs. 50-0-2 per ton	,,	63 10·32	...
2,547 lbs. at Rs. 83-10-11	,,	..	117 8·96
Less Scrap	,,	6 3·30	23 0·80
		57 7·02	94 8·16
Producer Gas	,,	13·63	1 2·72
Labour	,,	6 9·60	7 11·04
Materials, Rep., &c.	,,	1 10·46	1 14·08
Tools and Supplies, etc.	,,	1 9·36	1 0·96
Rolls a/c	,,	2 0·00	2 0·00
Steam	,,	1 6·81	3 2·72
General Works Expense	,,	15·52	1 15·04
Miscellaneous	,,	2 10·36	2 9·28
		75 2·76	116 0·00
Cost above metal	,,	17 12· 0	21 8·0 Increase Rs. 3 12 0
Conversion Cost	,,	25 3· 0	32 6·0 Increase Rs. 7 3 0

सत्यमेव जयते

STATEMENT No. LXVIII.

Statement showing comparison of Bar Mill costs for 1916-17 and 1921-22.

		1916-17.	1921-22.
Total production	Tons	30,000	30,000
Metal used per ton		2,633	2,633
Yield	Per cent.	85	85
Cost per ton	„	82	135 8 0
Steel billets—			
2,633 lbs. at Rs. 49-14-2 per ton	Rs.	58 10·14	..
2,633 lbs. at Rs. 83-10-5	„	..	98 5·44
Less Scrap	„	2 13·48	2 14·88
		55 12·66	95 6·56
Gas Producers	„	1 12·21	4 10·24
Labour	„	8 3·73	13 11·84
Materials, Rep., etc.	„	2 7·74	3 4·64
Tools and Supplies, etc.	„	3 8·81	3 1·44
Steam	„	1 9·46	4 3·84
General Works Expense	„	1 5·47	3 11·68
Contingent Fund	„	11·95	1 0·16
Rolls	„	5 0·00	3 0·00
Inspection	„	2·12	1 5·12
Miscellaneous	„	1 5·70	2 0·48
		81 15·85	135 8·00
Cost above metal	„	26 3 0 Increase Rs.	40 0 0 13 13 0
Cost of conversion	„	32 2 0 Increase Rs.	51 14 0 19 12 0

सत्यमेव जयते

STATEMENT No. LXIX.

Statement showing prices of raw materials charged in cost sheets.

	Ore.			Manganese.			Limestone.			Dolomite.			Coal.			Coke.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1916-17 . .	1	14	0	13	9	0	5	13	0	3	6	0	3	8	0	6	3	0
1917-18 . .	2	3	0	14	9	0	5	8	0	3	11	0	4	9	0	6	7	0
1918-19 . .	2	4	0	13	4	0	9	3	0	4	12	0	5	0	0	9	5	0
1919-20 . .	2	7	0	14	15	0	7	0	0	4	12	0	4	15	0	9	4	0
1920-21 . .	2	12	0	15	0	0	6	5	0	5	1	0	6	8	0	11	15	0
1921-22 . .	2	13	0	15	13	0	6	7	0	5	3	0	8	0	0	13	10	0
		plus			plus			plus			plus			plus			plus	
Increase in 1921–22 over 1916-17	0	15	0	2	4	0	0	10	0	1	13	0	4	8	0	7	7	0

STATEMENT No. LXX.

Statement showing depreciated value of fixed capital expenditure as at 31st March 1922.

	Original cost as at 31st March 1922.	Rate of Depreciation.	Total Depreciation up to 1921-1922.	Nett cost.
	Rs.	Rs.	Rs.	Rs.
1. Ores properties and concessions .	21,24,250	*Nil.*	..	21,24,250
2. Land and Town Station Road .	20,73,030	*Nil.*	..	20,73,030
3. Town Buildings . . .	83,69,859	2-1/2 percent	8,90,191	74,79,668
4. Town San. Works . . .	24,49,253	5 ,,	3,06,413	21,42,840
5. Ice and Aerated Water Factory .	55,550	6-1/4 ,,	32,534	23,016
6. Electric Light & Fan Installation	4,20,298	7-1/2 ,,	1,27,388	2,92,910
7. *Ores Wines and Quarries—*				
Properties	2,86,237	*Nil.*	..	2,86,237
Machinery	5,76,239	5 per cent.	3,74,681	2,01,558
Buildings.	1,61,576	2-1/2 ,,	29,884	1,31,692
8. Prospecting Department . .	1,97,212	*Nil.*	..	1,97,212
9. *Collieries—*				
Properties	45,00,582	*Nil.*	..	45,00,582
Machinery	1,11,21,005	7-1/2 percent.	35,82,851	75,58,184
Buildings	19,03,400	5 ,,	4,18,420	14,84,980
10. *Works construction—*				
Machinery	1,90,58,064	7-1/2 ,,	1,24,52,611	66,05,453
Buildings	42,09,149	5 ,,	19,57,897	22,51,252
11. Manganese Properties . .	4,06,480	*Nil*	..	4,06,480
12. Furniture.	2,87,751	5 per cent.	73,974	2,13,777
	5,81,99,935		2,02,46,844	3,79,53,019
Live Stock . .	89,838	15 per cent.	46,560	43,278
	5,82,89,773	..	2,02,93,404	3,79,96,369

STATEMENT No. LXXI.

सत्यमेव जयते

STATEMENT No. LXXI.

Statement showing cost value of fixed capital expenditure for the years 1911-12 to 1921-22.

	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ores Properties and Concessions	21,24,750	21,24,750	21,24,250	21,24,250	21,24,250	21,24,250
Land and Town Station Road	1,30,023	1,30,023	1,34,645	1,35,058	1,38,132	1,62,003
Town Buildings	13,66,312	16,45,862	17,24,483	17,60,781	19,93,296	22,00,123
Town Sanitary Works	54,172	2,30,462	2,59,444	2,57,259	2,86,956	3,27,087
Ice and Aerated Water Factory	6,831	49,572	50,787	50,787	50,787	51,250
Electric Light and Fan Installation	57,890	79,401	80,186	80,186	80,187	90,844
Ore Mines and Quarries Properties, etc.	2,05,733	2,05,733	2,09,100	2,09,548	2,09,548	2,10,083
Machinery	4,01,733	4,28,289	4,89,846	4,91,535	5,06,697	4,98,731
Buildings	78,766	85,120	89,810	97,605	1,02,807	1,02,580
Prospecting Department	..	..	..	75,094	1,13,123	3,03,504
Collieries—						
Properties	4,81,900	9,10,639	9,37,831	9,39,960	8,80,715	21,38,921
Machinery	3,68,004	4,13,913	9,77,720	14,27,433	16,38,726	37,15,457
Buildings	45,931	59,257	84,389	1,84,616	1,94,844	5,45,900
Works Construction—						
Machinery	94,27,688	1,01,84,500	1,26,72,683	1,35,38,041	1,47,39,516	1,57,75,760
Buildings	22,77,913	26,60,862	31,14,860	34,25,044	37,89,466	37,80,772
General	11,23,294	33,36,274	..	..	..	..
Manganese Properties	4,13,396	4,13,296	4,15,980	4,15,980	4,15,980	4,15,980
Furniture	74,806	57,513	61,960	72,702	78,734	85,355
Sundries	16,46,500	..	..	..	..	..
	2,02,85,642	2,28,15,466	2,34,27,980	2,52,85,879	2,73,43,764	3,25,28,600
Live and Dead Stock	4,617	..	2,500	4,472	4,400	22,357
	2,02,90,159	2,28,15,466	2,34,30,480	2,52,90,351	2,73,48,164	3,25,50,957

STATEMENT No. LXXI—*contd.*

Statement showing cost value of fixed capital expenditure for the years 1911-12 to 1921-22—contd.

	1917-18	1918-19	1919-20	1920-21	1921-22	Percentage of Depreciation.
	Rs.	Rs.	Rs.	Rs.	Rs.	
Ores Properties and Concessions	21,24,250	21,24,250	21,24,250	21,24,250	21,24,250	*Nil*
Land and Town Station Road	1,74,169	1,90,340	4,07,931	19,00,369	20,73,030	..
Town Buildings	26,52,148	31,15,968	43,15,788	64,63,232	83,69,859	2½
Town Sanitary Works	3,65,272	3,73,970	4,83,549	10,40,857	24,49,253	5
Ice and Aerated Water Factory	51,250	51,250	51,250	51,250	55,550	6¼
Electric Light and Fan Installation	1,17,054	1,67,731	2,36,834	2,87,924	4,20,298	7½
Ore Mines and Quarries Properties, etc.	2,10,127	2,10,067	2,88,731	2,61,722	2,86,237	..
Machinery	5,28,192	5,41,717	5,44,367	5,46,315	5,76,239	5
Buildings	1,05,233	1,05,500	1,14,812	1,51,894	1,61,576	2½
Prospecting Department	3,33,098	2,04,892	2,70,286	1,84,385	1,97,212	..
Collieries	5,501	..	..	..	..	..
Properties	38,77,425	40,74,172	44,64,136	44,68,879	45,00,582	..
Machinery	53,46,746	65,63,780	79,47,849	95,37,403	1,11,21,005	7½
Buildings	9,73,463	11,48,524	14,86,471	17,41,622	19,03,400	5
Works Construction—						
Machinery	166,55,544	1,70,05,029	1,82,22,857	1,88,82,857	1,90,58,064	7½
Buildings	37,72,538	39,40,182	41,86,006	42,01,192	42,09,149	5
General						
Manganese Properties—	4,15,980	4,15,979	4,15,979	4,06,480	4,06,480	..
Furniture	1,16,049	1,67,201	2,31,828	2,45,614	2,87,751	5
Sundries	..	..	..	..	..	..
	3,78,13,037	4,04,00,552	4,57,92,924	5,24,96,245	5,81,99,935	..
Live and Dead Stock	19,357	18,900	52,192	88,543	89,838	15
	3,78,32,394	4,04,19,452	4,58,45,116	5,25,84,788	5,82,89,773	

STATEMENT No. LXXII.

Statement showing depreciations on block values for the years 1911-12 to 1921-22.

	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Town Buildings	34,158	41,147	43,112	44,020	49,832	55,003
Town Sanitary Works	2,709	11,523	12,972	12,863	14,348	16,354
Ice and Aerated Water Factory	427	3,098	3,174	3.174	3,174	3,203
Electric Light and Fan Installation	4,342	5,955	6,014	6,014	6,014	6.813
Ores Mines and Quarries—						
Machinery	20,087	21,414	21,492	24,577	25,335	24,937
Buildings	1,970	2,128	2,245	2,440	2,570	2,565
Collieries—						
Machinery	27,600	31,043	73,329	1,07,058	1,22,904	2,78,659
Buildings	2,297	2,963	4,219	9,231	9,742	27,295
Works Construction						
Machinery	7,07,076	7,63,838	9,49,882	10,15,353	10,96,451	11,83.182
Buildings	1,13,896	1,23,043	1,55,743	1,71,252	1,89,473	1,89,038
General						
Furniture	3,740	2,876	3,098	3,635	3,937	4,268
Live and Dead Stock	678	..	575	671	660	3,354
	9,18,980	10,09,028	12,78,655	14,00,288	15,24,440	17,94,671

STATEMENT No. LXXII—*contd.*

Statement showing depreciations on block values for the years 1911-12 to 1921-22—contd.

	1917-18	1918-19	1919-20	1920-21	1921-22	Total.	Rate of Depreciation.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Per cent.
Town Buildings	66,303	77,899	1,07,892	1,61,580	2,09,245	8,90,191	2½
Town Sanitary Works	18,264	18,699	24,177	52,042	1,22,462	3,06,413	5
Ice and Aerated Water Factory	3,203	3,203	3,203	3,203	3,472	32,534	6½
Electric Light and Fan Installation	8,779	12,580	17,762	21,594	31,521	1,27,388	7½
Ores Mines and Quarries—							
Machinery	26,409	27,086	27,218	27,315	28,811	3,74,681	5
Buildings	2,638	2,633	2,860	3,797	4,038	29,884	2½
Collieries—							
Machinery	4,01,006	4,92,284	5,96,088	7,15,805	8,44,075	35,82,851	7½
Buildings	48,673	57,426	74,323	87,081	95,170	4,18,420	5
Works Construction							
Machinery	12,49,166	12,75,376	13,66,720	14,16,213	14,29,354	1,24,52,611	7½
Buildings	1,88,627	1,97,009	2,09,300	2,10,059	2,10,457	19,57,897	5
General							
Furniture	5,802	8,360	11,591	12,280	14,387	73,974	5
Live and Dead Stock	2,904	2,835	7,828	13,281	13,974	46,560	15
	20,21,774	21,75,390	24,48,962	27,24,250	29,96,966	2,02,93,404	

STATEMENT No. LXXIII.

Statement showing the value of stores and electrical stores purchased during 1921-22.

	Stores.			Electrical stores.		
	Rs.	A.	P.	Rs.	A.	P.
1921.						
April	31,228	10	10	5,882	11	4
May	76,676	12	9	23,156	9	6
June	3,39,798	12	6	64,639	2	3
July	1,14,934	14	10	9,138	6	9
August	1,08,984	15	6	9,806	12	3
September	1,45,689	0	1	7,956	2	2
October	1,30,985	13	3	14,426	2	3
November	56,613	1	10	38	15	5
December	1,19,050	0	3	5,103	7	11
1922.						
January	1,24,360	6	9	3,568	10	0
February	42,734	3	0	3,017	10	6
March	1,83,593	6	11	37,350	10	4
Total	14,74,250	2	6	1,84,085	4	8

STATEMENT No. LXXIV.

Statement showing rates of bonus for Blast Furnace.

Heads.	Rate, annas per ton.	Basis Tons.	REMARKS.
Superintendent	No bonus is being paid.		
Assistant Superintendent	1·44 2·16	30,000	1,000 tons at 1·44 annas a ton and balance at 2·16 annas a ton.
General Foreman	1·25 1·87	30,000	1,000 tons at 1·25 annas a ton and balance at 1·87 annas a ton.
2nd Foreman	·87 1·20	30,000	1,000 tons at ·87 annas a ton and balance at 1·20 annas a ton.
Traffic Foreman	·75	30,000	

In the event of "A", "B" Furnace being on ferro, the furnace in question will be given credit for the tonnage of foundry iron produced.

STATEMENT No. LXXV.

Statement showing bonus rates paid to Open Hearth (Nos. I and II) men.

Heads.	Rate, annas per ton.	Basis Tons.	REMARKS.
Superintendent	3·0	8,000	
Assistant Superintendent	2·0 2·5	9,000	1,000 tons at 2 annas a ton and balance at 0-2-6 a ton.
Shift Foremen and Melter Foreman	2·0 2·5	9,500	1,000 tons at 2 annas a ton and balance at 0-2-6 a ton.
1st Melter	1·5 2·0	10,500	1,000 tons at 0-1-6 a ton and balance at 0-2-0 a ton.
2nd Melter	1·0 1·5	10,500	1,000 tons at 1 anna a ton and balance at 0-1-6 a ton.
Brick Superintendent	1·5 2·0	10,500	1,000 tons at 0-1-6 a ton and balance at 0-2-0 a ton.
Brick Foreman	1·0 1·5	10,500	1,000 tons at 0-1-0 a ton and balance at 0-1-6 a ton.

Local hands, Open Hearth Department.

6 (six) Local Hands 2nd Melters 3·5 pies a ton above 10,500 tons.

Duplex Plant.

Superintendent Rs. 500 monthly until Plant in full operation.

Foremen Melters and 2nd Melters being paid bonus same as Open Hearth employés until Plant in full operation.

STATEMENT No. LXXVI.

Statement showing bonus rates for Blooming and 28″ Mill.

Heads.	Rate, annas per ton.	Basis Tons.	REMARKS.
Superintendent	4·26	11,000	
General Foreman	2·00	11,000	
Soaking Pit Man	2·00	11,000	
Re-Heater	1·28	11,000	
Head Rollers	2·00	11,000	
Assistant Head Rollers	1·28	11,000	
„ „ „	1·00	11,000	
Straightener	1·22	11,000	
Finishing Foreman	1·37	11,000	
	Bar mill.		
Shift Foreman	5·3	2,500*	
Puncher	5·3	2,500*	
H. B. Man	5·3	2,500*	

* Basis tonnage changed to 2,500 tons as shown above from 1st May 1923.

STATEMENT No. LXXVII.

Statement showing bonus rates paid to Plate Mill.

	Per month. Rs.
Superintendent	425
1st Roller temporarily at	200
Marker off temporarily at	165
Heater temporarily at	215
Assistant Roller temporarily at	150
Chief Shipper temporarily at	222

Bonus at above rates until Mill in Full Operation.

STATEMENT No. LXXVIII.

Statement showing average selling price per ton of Finished Steel during the period July, 1912 to June, 1914 and from April, 1919 to March, 1923.

Period.	28″ Mill.	Bar Mill.	Average rate of Finished Steel of 28″ mills and Bar Mills.
	Rate.	Rate.	
	Rs. A. P.	Rs. A. P.	Rs. A. P.
July 1912 to June 1913	..	..	108 1 0
„ 1913 „ 1914	..	..	104 14 9
April 1919 to March 1920	175 7 9	257 13 4	197 3 6
„ 1920 „ 1921	181 13 6	309 4 4	212 9 0
„ 1921 „ 1922	149 14 0	224 8 10	159 0 0
„ 1922 „ 1923	135 12 5	162 13 10	142 9 0

STATEMENT No. LXXIX.

Statement showing market value of Tata's Steel for 1921-22, after allowing a fair profit.

				Rs.	Lacs.
1. Expenses on total production (Jamshedpur)				...	204·93
2. Less sale proceeds of 107,000 tons of—					
Pig Iron				101·01	
Coal Tar				1·68	
Sulphate of Ammon.				3·85	
Scrap				1·27	
Water and Electric power				·10	
II Class Rails				9·55	
				117·46	117·46
3. *Add* Overhead charges on total production :—					87·47
Depreciation at rates given by Mr. Ginwala :—					
Old plant			30		
Gr. Extensions			5		
			35·00		
7½ per cent. interest on working Capital of Rs. 200 lacs			15·00		
Bombay Office expenses and Agents' Commission			7·31		
					57·31
					144·78
4. *Add* Profits on total capital employed in Operation :—					
Old Block as depreciated	380·00				
Gr. Extensions, say	100·00				
	480·00				
Ordinary and deferred Capital	277·00	10 per cent.		27·7	
1st Preference Capital	75·00	6 per cent.		4·5	
Reserve or 2nd Preference	128·00	7½ per cent.		9·6	
					41·80
					186·58

STATEMENT No. LXXX.

Note regarding Contracts with the Railway Board and the Palmer Railways.

These contracts were negotiated during the year 1917-18 before the conclusion of the War. The negotiations for the Palmer Railway Contracts were practically concluded by May-July 1918 and those with the Railway Board by September 1919. Conditions had altered in the interval and the view of the Steel Company's Board is very clearly expressed in our first letter to Government, dated 8th August 1919. We attach a copy of this and of their reply No. 516-S.—18, dated the 16th September 1919.

The point that is to be considered is what was the Steel Company's estimate of cost at which they could sell rails in 1918. During the years 1917-18, 1918-19, the Works cost of steel rails, leaving out of consideration any increase due to revaluation of stocks, was an average of Rs. 88 per ton. The all-in cost as calculated by our method which provides for all possible expenditure, was an average of Rs. 124-8-0 per ton.

It is to be remembered that what the Steel Company had to estimate was not the cost at which *they* could make rails, but the cost at which the English rail-makers could make them after the War. If the Steel Company could not ultimately meet that cost it would have to go out of business. We knew that during the War there had been a great increase in the manufacturing capacity in England and much money had been spent in bringing old plants up to date largely with Government assistance. We therefore knew that competition after the War would be very severe. We also knew that there had been a large increase in the prices of raw materials and labour in England during the War and the general expectation was that these would drop after the War as has actually been the case in that country. It is the almost invariable custom for all large manufacturers of steel to expect a small profit on their orders for rails. For these reasons we expected a comparatively low price in England after the War and this has actually been realised as is shown by the prices at which the Railway Board and other Railways in India purchased rails last year. What we did not foresee and what we think no one foresaw very clearly was the industrial boom and the high prices that followed the War in India. If that is not taken into account our calculations as to the English prices are probably justified by the results and, considering the long period of the contracts, are probably not so very far out if the total price is averaged over the seven years. These therefore were the conditions. We knew that we had to meet a very low price from England and that forecast is proved to be correct. Our average costs at the time when the contracts were made were Rs. 88 for Works costs and Rs. 124-8-0 for all-in costs. This allows Rs. 36 a ton for overhead charges which we then expected to be reduced by the Greater Extensions. At that time we expected the Greater Extensions to be in operation at the latest by the end of 1920 and our Agreement with our Consulting Engineers who were responsible for the construction actually expired in December 1920 and was subsequently renewed. We have already explained the causes that led to the delay in construction. Our Consulting Engineers' estimate of the works cost on rails from the new plant was originally as low as Rs. 56-12-5. This estimate was made in 1916 on the basis of a Works cost of Rs. 78-6-11 in January and February 1916 and a cost of coal of Rs. 4-6-0.

Taking all these circumstances into account we considered that we should be able to manufacture at a cost of Rs. 90, and with an overhead charge of Rs. 30 the total cost of rails to us would have worked out to a cost of Rs. 120, and we also had every reason to suppose that we should do better than this. The contracts were essential to the Steel Company and are still, in spite of the inadequate prices realised in the past, a great asset to-day as they ensure a steady and continually growing market for its rails. It is entirely wide of the point to argue that we should have bargained for a fluctuating price dependent either on the cost of raw materials or on the English prices, as the Railways would not agree to a proposal of that kind. Their attitude is very plain from the letter from the Railway Board who considered this a very liberal offer. It was a question, as all commercial business is, of taking one risk or another and we preferred what we considered the lower risk of fixed prices which ensured a continual market for our products to the risk of leaving the Steel Works in a position of insecurity without forward sales.

Bombay, 7th-8th August 1919.

The Secretary,
Railway Board,
Simla.

DEAR SIR,

We beg to acknowledge receipt of your letter No. 516-S.—18 of the 15th ultimo relative to negotiations pending with your Board for the supply of rails and fish-plates by our Company to State Worked Railways after 31st March 1920.

2. Your letter, though addressed to Bombay, was by mistake forwarded to our Works Office at Jamshedpur, and hence the delay in replying. It was placed before our Board at the first Meeting after its receipt on the 31st July 1919.

3. The Directors wish us to thank you for the friendly and appreciative tenure of your communication, particularly the Chairman's references in the Legislative Council to the services rendered by the Steel Company during the War.

4. Nevertheless, the Steel Company had to complain that it has been treated differentially during the War, that the prices to it have been left stationary after 1916-17, though its costs have continued to increase; that over and above the increase of costs the Steel Company had to pay a Super Tax in 1917-18 and an Excess Profits Tax later, and that this was not considered in the prices offered; that the Steel Company pushed the production in war time and made provision for possible over-long continuance of the War, that they put orders for machinery in war time at extravagant rates; that prices more or less on a level with the pre-war standard would not pay the Steel Company, in view of this inflation of capital expenditure; that when negotiating the rates of 1916-17 and subsequent years it was expressly given forth as a ground for not increasing the rates that the Steel Company had been exempt from the Excess Profits Tax which fell so heavily on the English Manufacturer; that the Steel Company had therefore expected that when the Excess Profits Tax came to be discussed, they would be expressly exempted from the operation of it, and that the Railway Board or the Munitions Board would make a minute to that effect; that the benefit of the low prices charged by the Steel Company went not to the Indian Exchequer but more largely to the British Exchequer; that the prices of other trades in India were not controlled to the same extent as the prices paid to the Steel Company and that the competitors of the Steel Company distinctly benefited in the sale to the general public of their products while the Steel Company was preoccupied in making steel for the Government.

5. The Directors go into this matter now not to reopen a question which was settled, but to explain that, during the transactions in the years of the War, the Steel Company have not been treated *so* generously that they can afford to accept lower prices than they possibly can get.

6. The Steel Company has negotiated its contracts with other Railways and are frankly repentent; their calculations have been entirely upset; costs do not diminish after the War, and prices elsewhere are also increasing.

7. It is worth while laying before the Railway Board the actual course of costs as in the following table :—

1914-15	Rs. x plus Rs. 7
1915-16	,, x ,, ,, 3
1916-17	,,
1917-18	,, x ,, ,, 8
1918-19	,, x ,, ,, 19 (plus 13 for writing down stores, from War values to Market values).

8. You will perceive that as the table stands, the costs of the Steel Company have steadily fallen from the beginning of the War up to the year 1916-17 (x in the above table); that in the next two years the costs have repeatedly increased until, in the year that is now closed, the costs are Rs. 32 more than the costs in 1916-17. Of this rise of Rs. 32, Rs. 13 are accounted for by the depreciation of stores and Rs. 19 and more are accounted for by the higher cost of raw materials, stores and labour. From a calculation actually made, it appears that the technical practice of 1918-19 was slightly better for rails than in the most favourable preceding year.

9. This table represents bare costs at the Works; no interest or depreciation on capital has been put in, no *extra* depreciation charge has been made for the high capital costs specially incurred by the Steel Company for the help of supply during the War. No extra depreciation has been allowed for the overwork of machinery and plant owing to the strain put on them to meet the demand for highest production; nor does the table show the provision that has been made

in the last two years for Welfare Work for the working classes at Jamshedpur nor for the interest on capital expenditure on roads and drains or for the maintenance of the same; nor does it include the loss on the town service in rents, in supply of rice and clothing to the workmen during famine time, etc.

10. When the Railway Board in the preceding years declined to raise the prices to the Steel Company on the ground that their costs had not altered, they overlooked the fact that so far as the costs had been kept under control by the Steel Company, that was due to the foresight of the highly paid Engineers of the Steel Company who made the Steel Company independent of the fluctuations of ore or flux or a portion of coal or refractory bricks or parts of machinery such as rolls which have been manufactured at Jamshedpur instead of being imported. It is no exaggeration to say that if the Steel Company had bought in the open market all its raw material and stores as the English Manufacturers do, its costs would have positively doubled or more.

11. One fact has only recently come to light, that in return for controlled prices for domestic consumption in England as compared with the export prices which were usually higher during the War, the State made to the controlled plants in England certain capital subsidies which the Steel Company has not got. This matter came to the notice of the Steel Company only last month in discussing the different internal and export prices for Sulphate of Ammonia, and it is presumed that the same would be the case for steel.

12. A part of your argument is that the Steel Company has, with the prices Government sanctioned, been so prosperous that it can, in times of Peace, endure a further reduction of prices. We confidentially send you a copy of the first draft of our Balance Sheet of this year which is such that owing to an unforeseen charge for the wiping off of new preliminary charges, the dividends this year might have to be passed over. It does not matter that this is an unforeseen charge, because if this charge had not been there, it would have become necessary to reduce the capital this year by at least that amount for the sake of writing down the capital account inflated by war prices.

II.

"Metal unchanged, but steel expected to advance owing to coal situation."

We beg that you excuse the length of this letter, but it is worth while fully meeting the arguments of your letter under reply. Our reply is that we were not so generously treated during the War that there is any surplus to fall back upon in time of Peace, when the prices outside do not diminish, as will be seen from a recent cable received from our London Office and reproduced in margin, and the costs to the Steel Company keep growing. We frankly regret as unwise the Contracts with the other Railways and beg that they should not be made the ground of newer contracts. We have already refused this contract or anything like it to the East Indian Railway and other Railways who did not come in when we first made the offer. The prosperity of the Steel Company cannot be made the ground of reduced prices because your idea of its prosperity is somewhat exaggerated. The Excess Profits Tax is a new burden to be borne in mind. The need to set apart a certain sum per ton from prices to write off the capital account swollen by war prices and freights has also to be borne in mind, and finally what we put to you is that the value of *money* has changed in India; the Rupee does not go half as far as it used to. We have at least 8,000 poor shareholders (who never in any year got from the Steel Company more than Rs. 200 dividend) who cannot meet the increased cost of living if the prices of rails be anything like the Railway Board's suggestions.

The Board wish to record their conviction that in view of the existing Railway Contracts, of the continuous rise of costs, the diminishing value of money, of the high capital cost of the new machinery, and in view of the obligations incurred by the Steel Company for welfare expenses, the price of Rs. 125 per ton of rail is not a living price for the Steel Company.

III.

At the same time our Board is anxious to meet as far as possible your Board Mr. Padshah has confessed to us that when he negotiated with the English Boards of Indian Railways and when he negotiated with your President, the facts adduced in this communication were not before him. Nevertheless we do not wish to disown him. If the choice be between your offer as per your last letter and adhering to prices as in our contract with you, the Board would respectfully beg to return to that contract basis, but as Mr. Padshah has done so much work and has brought negotiations to such a pitch, we would accept a ten years' contract at the rate of Rs. 130 per ton for rails 60 lbs. and above, the quantities being taken as in your letter, namely 400,000 tons over the whole period with not more than 20,000 during the first three years, with the option to the Steel Company to supply any more that the Government would need, either at the market rate of the day or at the fixed rate, whichever you prefer now. That is to say, the Steel Company has the option to supply all the requirements of the Government of India in rails, fish-plates, etc. If, for example, the Government of India came to construct the Mesopotamian Railways, the Steel Company would have the option to supply rails, etc., for those Railways.

The Steel Company beg that the fixed prices above mentioned should be treated as minimum prices as conforming to the Cost Sheet of the average of 1918-19. If the costs of the Steel Company rise, then it is suggested that the Railway Board and the Steel Company divide the excess, the Steel Company to bear half the burden in order to give it an inducement to introduce economy in costs. The Railway Board to bear half the burden, because most probably the rise in costs would be due to rise in freights, rise in wages and rise in the cost of stocks, rise in the cost of winning raw material and the poorer quality of the coal, in all which the Steel Company cannot introduce improvements however much it may try. These rises should be considered as depreciation of money.

We are, Dear Sir,
Yours faithfully
Tata Sons, Limited, Agents,
(Sd.) J. D. GHANDY,
Director.

सत्यमेव जयते

Dated Simla, the 16th September 1919.

To

Messrs. The Tata Iron and Steel Co., Ltd.,
Bombay.

DEAR SIRS,

I am directed to acknowledge the receipt of your letter No. S. G.-941—19, dated the 8th August 1919, regarding the supply of rails and fish-plates by the Tata Iron and Steel Company, Limited, to State-worked Railways after the 31st March 1920. The Board have given their very careful consideration to the circumstances put forward in your letter, and I am now directed to make the following proposals for the supply of rails and fish-plates to State-worked Railways after the 31st of March 1920.

2. In view of the fact that your Directors are unwilling to couple the lower rate proposed by the Board with the increased tonnage asked for by you, the Railway Board regret they are unable to agree to enter upon a contract covering so long a period as 10 years. They, therefore, feel themselves obliged to revert to the shorter period of 7 years and to reduce the tonnage proportionately. They accordingly propose that the Agreement to be entered into with your Company to have effect from 1st April 1920 should provide for the purchase by Government from the Tata Iron and Steel Company of 300,000 tons of steel rails and fish-plates within a period ending 31st March 1927. This agreement would be subject to the condi-

tion that the rails and fish-plates supplied comply with Government specification, that the Company shall deliver not less than 25,000 tons per annum for the first three years, and thereafter not less than 43,000 tons per annum, the actual quantity required being notified by Government from time to time. If in any year the Company are unable to deliver the quantity required, of which due notice will be given, the Board will be free to order the balance elsewhere; also Government requirements should be given priority over those of other customers of the Company.

3. The prices which the Board now offer over the whole period are:—

	Per ton. Rs.
For rails 50 lb. section and upwards	130
,, 40 lb. ,, up to 49	140
,, below 40 lb. section	150

the prices per ton of fish-plates in all cases to be the prices per ton of the rail section to which they belong, increased by Rs. 30.

4. As the Board regard this offer as a liberal one and are unable to expand further the terms proposed, I am to express the hope that it will prove acceptable to your Directors.

5. I am to state in conclusion that the Railway Board are unable to accept the conditions outlined in the last 2 paras. of Part III of your letter under reply.

Yours faithfully,

(Sd.)

Secretary, Railway Board.

STATEMENT No. LXXXI.

Statement showing estimated production of all Departments for the years 1923 to 1926.

—	1923-1924	1924-1925	1925-1926.
	Tons.	Tons.	Tons.
Coke	625,000	795,000	850,000
Sulphuric acid	4,800	12,500	16,000
Sulphate of Ammonia	4,500	7,000	8,000
Coal Tar	14,600	17,000	18.000
Pig Iron	448,000	563,000	610,200
Ferro Manganese	4,700	7,000	7,600
Steel Ingots East Plant	45,500	270,000	360,000
,, ,, West ,, ...	186,500	196,500	210,000
Blooms and Billets East Plant . . .	26,200	322,200	380,800
,, ,, West ,, ...	178,200	88,300	88,300
28″ Mill East Plant	..	156,200	175,000
,, ,, West ,, ...	96,500	60,000	60.000
Sheet Bar and Billet Mill	6,500	35,000	35,000
Merchant Bar Mills East Plant . . .	1,950	38,000	43,900
,, ,, ,, West ,, ...	40,400	18,000	18,000
Plate Mill	20,800	18,000	48,000
Sheet Mill	..	14,000	36,000
Sleeper Plant	..	..	2,820
Blooms and Billets for Sales	1,000	2,000	3,000

सत्यमेव जयते

STATEMENT No. LXXXII.

Statement showing estimated allocation of finished steel output when Greater Extensions are working fully.

Steel Castings	Nil for Sale.
Ingots, Billets, Blooms and Slabs	3,000
Bars and Rods ordinary, over ½ inch	37,400
Bars and Rods ordinary, ½″ or under	7,500
Angles, beams, channels and tees (medium and heavy) 4″ Angles and up	75,000
Angles, beams, channels (light) 3″ Angles and below	12,000
Fish-plates and bearing plates	10,000
Rails under 40 lbs.	5,000
Rails 40 lbs. and over	150,000
Sleepers, with distance-pieces and keys	2,820
Plates (ordinary) 1½ inch or over	Nil.
Plates (ordinary) under 1½ inch	48,000
Sheets, black	18,000
Sheets, galvanized	19,000
Tin-bar	35,000

STATEMENT No. LXXXIII.

Statement showing the programme of completion of Greater Extensions units.

Units.	Date of completion or present position.
"C" Furnace	Ready. Waiting for Coke.
Wilputtee Coke Ovens No. 3 Battery	20th November 1923. Ready for heating.
Water Tunnel	In Service.
Pump House No. 2	Ditto.
6,000 K. W.	Ditto.
10,000 K. W.	Ditto.
Power Line to Plate Mill Wilputte Coke Ovens and Pump House	Ditto.
Power House to New Steel Plant	Ditto.
Mixer	First charged July 1923.
Converters	January 1924.
No. 2 Open Hearth	1st January 1924.
Soaking Pits.	4 Pits completed. Remainder 1st January 1924.
40″ Blooming Mill	Operating.
18″ × 24″ Mill	Completed. Waiting for Steel.
Sheet Mill	30th April 1924.
Merchant Mill	1st March 1924.
28″ Mill	31st March 1924.
Boiler Plant No. 4	1st January 1924.
Calcining Plant	1st January 1924.
Roll Shop	Completed August 1923.

STATEMENT No. LXXXIV.

Statement showing the actual value and total depreciation of old plant for the year 1922-23 and the estimated value and estimated total depreciation for the year 1923-24 of the same old plant.

	Rate per cent.	1922-23.						APPROXIMATE 1923-24.					
		Value.			Total Depreciation.			Value.			Total Depreciation.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Ore Properties Concessions, etc.	*Nil.*	21,24,250	0	0	*Nil.*			21,24,250	0	0	*Nil.*		
Land and Town Roads	*Nil.*	20,93,129	4	8	*Nil*			20,93,130	0	0	*Nil.*		
Town Buildings	2½	87,94,769	1	0	2,19,869	0	0	89,94,769	0	0	2,24,869	0	0
Town Sanitary Works	5	31,04,503	1	10	1,55,225	0	0	31,54,503	0	0	1,57,725	0	0
Ice and Aerated Water Factory	6¼	55,550	7	6	3,471	0	0	55,550	0	0	3,471	0	0
Electric Light and Fan Installation	7½	4,25,556	8	6	31,916	0	0	4,45,557	0	0	33,417	0	0
Ore Mines and Quarries—													
Machinery and Plant	5	5,16,801	15	2	25,840	0	0	5,16,802	0	0	25,840	0	0
Buildings	2½	1,75,646	15	1	4,391	0	0	1,76,147	0	0	4,403	0	0
Properties account	*Nil.*	3,26,361	14	2	*Nil.*			3,26,362	0	0	*Nil.*		
Prospecting Department	*Nil.*	2,61,074	7	2	*Nil.*			2,61,100	0	0	*Nil.*		

Collieries—					
Machinery and Plant	7½	1,24,48,314 8 3	9,33,624 0 0	1,40,00,000 0 0	10,50,000 0 0
Buildings	5	19,84,408 6 6	99,220 0 0	20,00,000 0 0	1,00,000 0 0
Properties, etc.	*Nil.*	45,08,746 6 4	*Nil.*	45,08,800 0 0	*Nil.*
Works Construction—					
Machinery and Plant	7½	1,89,83,460 8 6	14,23,759 0 0	1,89,83,460 0 0	14,23,759 0 0
Buildings	5	42,09,197 12 8	2,10,459 0 0	42,09,198 0 0	2,10,459 0 0
Technical Institute—					
Plant and Equipment	5	79,945 0 6	3,997 0 0	79,945 0 0	3,997 0 0
Building	2½	62,651 6 2	1,566 0 0	62,651 0 0	1,566 0 0
Manganese Properties—					
Properties, etc.	*Nil.*	4,06,479 8 11	*Nil.*	4,06,479 0 0	*Nil.*
Furniture	5	2,70,975 6 11	13,548 0 0	2,70,975 0 0	13,548 0 0
Live and Dead Stock—		6,08,31,822 11 10		6,26,69,678 0 0	
Motor Bus, etc.	15	80,271 7 0	12,040 0 0	80,271 0 0	12,040 0 0
			31,38,925 0 0		32,65,094 0 0

STATEMENT No. LXXXV.

Statement showing comparison of costs, U.S.A. and Canada, first quarter 1923, with Jamshedpur (February to May 1923).

Rs. 3 = $ 1·00

—	Canada.				U. S. A.				Jamshedpur (scrap credit at Rs. 20).				Jamshedpur cost (scrap credit at Rs. 36-13-0) (pig cost price).		
	$	Rs.	A.	P.	$	Rs.	A.	P.	$	Rs.	A.	P.	Rs.	A.	P.
Pig iron—															
Material per ton of iron	21·00	63	0	0	..	..			9·54	28	10	0	28	10	0
Cost above	3·70	11	2	0	..	..			2·73	8	3	0	8	3	0
Total	24·70	74	2	0	24·00	72	0	0	12·27	36	13	0	36	13	0
Labour	·85	2	9	0	1·00	3	0	0	·89	2	11	0	2	11	0
Ingots—															
Pig iron	23·00	69	0	0	23·00	69	0	0	12·27	36	13	0	36	13	0
Scrap	13·00	39	0	0	20·00	60	0	0	7·63	22	14	0	36	8	0
Mixture	16·75	50	4	0	22·00	66	0	0	11·23	33	11	0	36	0	0
,, per ton of ingots	19·00	57	0	0	24·50	73	8	0	13·00	39	0	0	41	4	0
Conversion	8·00	24	0	0	8·00	24	0	0	12·19	36	9	0	36	7	0
Cost above	5·75	17	8	0	5·50	16	8	0	10·42	31	4	0	31	3	0

Total	24·75	74 8 0	30·00	90 0 0	23·42	70 4 0	72 7 0
Labour	1·10	3 5 0	1·50	4 8 0	1·92	5 12 0	5 12 0
Blooms—							
Ingots	25·00	75 0 0	30·00	90 0 0	23·42	70 4 0	72 7 0
Conversion	4·50	13 8 0	5·00	15 0 0	5·33	18 0 0	14 6 0
Total	29·50	88 8 0	35·00	105 0 0	29·40	88 3 0	86 13 0
Labour	·65	1 15 0	1·50	4 8 0	·56	1 11 0	1 11 0
Rails—							
Blooms	..	..	35·00	105 0 0	29·40	88 3 0	86 13 0
Conversion	..	..	6·00	18 0 0	11·65	34 15 0	35 1 0
Total	..	..	41·00	123 0 0	41·00	23 0 0	121 14 0
Bars—							
Billets	29·50	88 8 0	35·00	105 0 0	29·40	88 3 0	86 13 0
Conversion	9·50	28 8 0	10·00	30 0 0	15·58	46 12 0	44 2 0
Total	39·00	17 0 0	45·00	135 0 0	44·98	34 15 0	130 15 0
Labour	4·50	13 8 0	..	..	3·98	11 15 0	11 15 0

NOTE.—Cost of pig iron at the blast furnace does not agree with the price charged to ingots in U. S. A. and Canada as they use an average price when charging to the open hearth furnace.

STATEMENT No. LXXXVI.

Statement showing capital expenditure of Greater Extensions in operation and depreciation on same.

—		Rs.	Depreciation on the basis of 5 lacs allowed for 1922.
Capital Expenditure of Greater Extensions in operation on .	31st March 1922 .	1,83,79,107	5 lacs.
	31st March 1923 .	5,62,79,524	15 „
Estimated on	31st March 1924 .	13,28,76,995	20 „

The amount has been reduced proportionately as in both years all the plant was not in operation for the whole of the year. We consider this a fair allowance corresponding to the amount allowed in 1922.

सत्यमेव जयते

STATEMENT No. LXXXVII.

Statement showing comparison of products and cost of old and new plant.

—	AUGUST 1923.		SEPTEMBER 1923.		OCTOBER 1923.		Total Production.	Average cost for 3 months.
	Production. Tons.	Cost per ton.	Production. Tons.	Cost per ton.	Production. Tons.	Cost per ton.		
		Rs.		Rs.		Rs.		Rs.
B. P. Ovens	9,730	14·99	9,611	15·13	9,887	14·84	29,228	14·99
Wilputte Ovens . . .	26,931	15·20	26,796	15·35	27,873	15·20	81,600	15·25
A, B & E. Pig Ferro 1333 - Pig	18,230 5,332	42·42	24,293	39·22	24,106	38·58	66,629 5,332	40·05
D. Furnace	13,318	31·91	13,015	33·77	13,035	34·96	39,368	33·54

As the sulphuric acid plant extension was not completed when the batteries of the Wilputte Coke Ovens came into operation, the full complement of bye-products was not available, thus reducing the credit for the ovens. This deficiency will be seen remedied almost entirely in the November 1923 cost, in which month the sulphate of ammonia output was 358 tons as against an average of 180 tons for the preceding 5 months.

A and E Furnaces were on Foundry Pig Iron and so the cost would be more due to high consumption of coke and flux and also due to low production, whereas D Furnace was on Basic and so the cost would be less.

STATEMENT No. LXXXVIII.

Statement showing difference between the value of the Company's coal used in works (for Operation Department) after taking into account depreciation on machinery and building and the value of coal purchased from outside collieries.

—	1921-22. Per ton.	1922-23. Per ton.
	Rs.	Rs.
Average cost of raising from Tisco Collieries .	5·71	5·14
Depreciation	2·25	2·00
	7·96	7·14
Price of purchased coal f.o.r. Collieries . .	6·61	8·96
Tonnage received from outside collieries . .	Tons. 507,266	Tons. 570,958

If we had been able to supply all the coal from our own collieries, there would have been a loss of Rs. 6,74,806 in 1921-22 and a saving of Rs. 10,39,143 in 1922-23.

सत्यमेव जयते

STATEMENT No. LXXXIX.

Statement of prices paid to Messrs. McClintic Marshall Products Company, Limited, for fabricated material ordered out from the United States of America.

—	Cents per lb.	Present price.
1. For flates, shapes and bars when delivered at Contractor's works from the rolling mills.	3·025	2·775 cents per lb. at mills in U. S. A.
2. For fabricated material when ready for shipment from Contractor's works, 1·21 *plus* ·277	1·487	..
3. Railway freight (U. S. A.) and ocean freight .	1·65	·50 cent per lb.
4. For material as erected in India	·74	..
TOTAL .	6·902	..

N.B.—We are unable to find out figures for items (2) and (4).

STATEMENT No. XC.

Statement showing consumption of coal at collieries for years 1916-17, 1921-22 and 1922-23.

	Colliery consumption.	Percentage of total raisings.
	Tons.	
1916-17	19,367 (Bhelatand and Malkera).	23·20
1921-22	79,516 (all collieries).	19·07
1922-23	85,251 (all collieries).	16·57

STATEMENT No. XCI.

Statement showing the actual average cost per ton of raising the coal including overhead charges from January 1912 to March 1923.

——	Bhelatand.	Malkera.	Jamadoba.	Sijua.	Purshotampur.	Average.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
January 1912 to December 1912.	2 10 8	..	..	..	..	2 10 8
January 1913 to December 1913.	3 2 1	..	..	..	..	3 2 1
January 1914 to December 1914.	3 0 2	..	..	..	..	3 0 2
January 1915 to December 1915.	2 9 9	2 4 5	..	..	..	0 2 6·69
January 1916 to December 1916.	3 7 0	2 11 10	..	..	..	0 2 15·81
January 1917 to June 1917.	3 7 4·32	4 15 4·32	2 12 5·76	..	..	3 2 3·70
July 1917 to June 1918.	3 13 3·36	6 3 2·04	3 1 6·24	3 1 11·04	..	3 8 6·94
July 1918 to March 1919.	3 5 3·36	4 8 3·84	2 13 5·28	3 0 0·00	..	3 1 0·56
April 1919 to March 1920.	3 3 4·32	3 12 9·06	3 3 10·08	3 7 4·32	..	3 5 9·47
April 1920 to March 1921.	4 7 4·32	6 10 8·64	4 15 10·08	5 15 6·24	..	5 5 8·45
April 1921 to March 1922.	6 0 1·92	6 7 8·16	5 1 9·12	6 1 11·04	12 10 8·64	0 5 11·36
April 1922 to March 1923.	..	5 3 6·24	4 14 2·80	5 3 0·48	8 3 6·24	0 5 2·34

STATEMENT No. XCII.

Statement showing comparative costs of one 200-ton Open Hearth Tilting Furnace in India and U. S. A.

——	India.	U. S. A.
	Rs.	Rs.
I. F. o. b.	25,51,000	37,59,000
Ocean freight	4,21,100	..
Ocean insurance	14,900	..
Commission	37,900	..
Landing and trans.	29,300	..
Duty	82,600	..
Interest	3,71,500	..
II. Extra construction	14,49,600	..
Supervision	3,66,900	3,00,700
III. Spares	2,50,000	2,50,000
	55,74,800	43,09,700

NOTE.—The above prices included furnace proper complete with building, gas producers, stripping yard, stockyard, ladles, but *does not* include skull cracker, locomotives, tracks, etc.

STATEMENT No. XCIII.

Statement showing comparative costs of one 500-ton Blast Furnace in India and U. S. A.

——	India.	U. S. A.
	Rs.	Rs
I. F. o. b.	20,67,000	D/D and erected 49,31,600
Ocean freight	3,25,000	..
Ocean insurance	39,000	..
Commission	13,000	..
Landing and trans.	26,000	..
Duty	1,30,000	..
Interest	8,30,000	..
II. Extra construction	34,37,500	..
Supervision	4,80,000	3,94,500
III. Spares	9,95,000	6,50,000
	83,42,500	59,76,100

NOTE.—The above prices include the furnace proper complete with stoves, cast house, bins, gas mains, skip bridge, blowing engines, boilers, pumps, ladles and electrical power generating equipment, but *does not* include coke plant, pig casting machine, ladle repair shops, railway tracks, locomotives, etc.

सत्यमेव जयते

STATEMENT No. XCIV.

Statement showing comparative costs of one 28″ mill in India and U. S. A.

——	India.	U. S. A.
	Rs.	Rs.
I. F. o. b.	1,01,56,000	D/D and erected 1,24,46,000.
Ocean freight	3,80,000	..
Ocean insurance	50,700	..
Commission	60,200	..
Landing and trans.	94,500	..
Duty	3,36,200	..
Interest	9,40,600	..
II. Extra construction	27,48,000	..
Supervision	11,20,000	9,95,700
III. Spares	23,56,600	19,50,000
	1,82,42,800	1,53,91,700

NOTE.—The above prices *do not* include any charges for reheating furnaces, railway tracks, etc.

सत्यमेव जयते

STATEMENT No. XCV.

Statement showing consumption of stores, etc., during the year 1921-22.

	Rs.	A.	P.
Stores	15,93,026	2	1
Electrical	3,55,373	11	7
Timber	82,581	2	7
Clay	10,462	5	7
Cement	18,595	8	10
Fireclay	59,563	4	9
Coal tar	1,680	3	7
Chrome ore	1,702	10	5
Sand	998	5	2
Magnesite	3,953	15	2
Lime	3,334	0	0
Firewood	26,630	14	8
	21,57,902		0

STATEMENT No. XCVI.

Statement showing detailed analysis of the ores, coal, coke, dolomite and limestone and also of the ash of the coke used by the Steel Company.

IRON ORE.

—	For blast furnaces.	For Open hearth.
	Per cent.	Per cent.
FE	59·36	63·60
SiO_2	5·11	2·39
Al_2O_3	4·52	...
Mn	·47	·54
Phos	·063	·035

DOLOMITE.

—	For blast furnaces.	For Open hearth.
	Per cent.	Per cent.
Insoluble residue	3·58	1·38
Al_2O_3 and Fe_2O_3	1·43	1·14
CaO	29·69	30·88
MgO	20·03	20·96

LIMESTONE.

—	From Steel Co.'s quarry at Baraduar.	Bought limestone from Jukeni.
	Per cent.	Per cent.
SiO_2	3·94	2·93
Fe_2O_3	·96	·77
Al_2O_3	1·35	·99
CaO	51·94	52·64
MgO	1·05	1·42

सत्यमेव जयते

COKING COAL.

Ash.	Vol. matter.	Fix. carbon.	Sul.
16 per cent.	24 per cent.	60 per cent.	45 per cent.

COKE.

Ash.	Vol. matter.	Fix. carbon.
23·5 per cent.	1·8 per cent.	75 per cent.

TYPICAL ANALYSIS OF COKE ASH (1923).

SiO_2	Fe_2O_3	Al_2O_3	CaO	MgO	MnO	P_2O_5	Ti_2O	Total alkalis.
50·50	11·84	27·29	3·71	1·31	0·47	1·81	1·61	1·15

STATEMENT No. XCVII.

Statement showing holdings of the Tata interests in the Tata Iron and Steel Company, Limited.

	Par value.	Value at current rate.
	Rs.	Rs.
Shares—		
Before 1914: 32,800 Ordinary and 3,000 Deferred.	25,50,000	..
At present: 32,600 Ordinary, 4,500 Deferred, 2,800 Second Preference.	28,60,000	16.70,000

The highest quotation for Ordinary and Deferred Shares was Rs. 430 and Rs. 1,640, respectively in the year 1918. If the Agents had sold their holdings at these prices, as they could have done, they would have realised Rs. 1,90,24,000, or a profit of Rs. 1,64,74,000.

STATEMENT No. XCVIII.

Note regarding dividends paid by the Tata Iron and Steel Company.

It has been suggested that when the Company made large profits, it distributed them by way of very large dividends on Ordinary and Deferred Shares and did not create sufficient Reserves to meet future contingencies.

This note is submitted to show that it is not correct to say that large dividends have been paid to the Ordinary and Deferred Shareholders. The enclosed statement shows the distribution of total dividends paid in each year among the various classes of shares.

In order to consider the position of the Company in regard to the distribution of the alleged large dividends on shares, it is necessary to understand the Article governing the distribution of dividends.

The Articles of Association of the Company provide that the profits of the Company which it shall from time to time be determined to divide in respect of any year or other period shall be applied—

first in paying the fixed cumulative dividends on Preference and Second Preference Shares;

next in paying 8% per annum non-cumulative dividend on Ordinary Shares;

next in paying 25% per annum non-cumulative dividend on Deferred Shares.

After making the above payments, the surplus may be distributed as follows:—

50% among Ordinary Shareholders.

50% among Deferred Shareholders.

Illustration.

Year 1919-20.

Profits available for distribution, Rs. 50,30,176-6-2.

Shares entitled to Dividends:—

50,000 6% Cumulative First Preference Shares.

700,000 7½% Cumulative Second Preference Shares (on amount paid up).

200,000 Old Ordinary Shares.

22,500 Old Deferred Shares.

सत्यमेव जयते

(NOTE.—150,000 New Ordinary Shares and 26,250 New Deferred Shares do not participate in profits earned prior to 30th June 1921 by arrangement at the time of issue.)

	Rs.
6% Cumulative I Preference Shares dividend absorbs	4,50,000
7½% Cumulative II Preference Shares dividend absorbs	5,46,875
8% Dividend on Ordinary Shares absorbs	12,00,000
25% Dividend on Deferred Shares absorbs	1,68,750
	23,65,625

Deducting Rs. 23,65,625 from Rs. 50,30,176-6-2, there remains for further distribution Rs. 26,64,551-6-2. Out of this sum, Rs. 2,64,551-6-2 is carried forward and Rs. 24,00,000 distributed as under:—

	Rs.
Further dividend on Ordinary Shares	12,00,000
Further dividend on Deferred Shares	12,00,000

The above method will explain why the dividends on a Deferred Share of Rs. 30 only were as high as Rs. 87-8-0 per share, because the number of Deferred Shares was very small, they being 22,500 only as against the 200,000 Ordinary Shares

A question may be asked as to why this method of distribution was adopted by the Company which made the Deferred dividends so speculative. The answer is that one Deferred Share both in the original and the new capital was allotted only to any one who subscribed for 10 Ordinary Shares.

Therefore in reviewing the dividends paid by the Steel Company dividend on one Deferred Share must be coupled with the dividend on ten Ordinary Shares.

The annexed table shows that in sixteen years (from 1907 to 1923) the Company paid Rs. 82 per each Ordinary Share and Rs. 358-5-4 per each Deferred Share, or, in other words, on 10 Ordinary and 1 Deferred Share Rs. 1,158-5-4. The capital invested in 10 Ordinary and 1 Deferred Share is Rs. 780. This gives on an average 8·15% per annum. This in itself is not excessive, and is enough to dismiss the allegation that the Company has paid large dividends. But if allowance be made for the fact that for the first seven years the ordinary shareholders had to go without any dividend, the rate per cent. will be still less.

The amount actually paid in dividends from the profits on all the shares has amounted to 7·05% per annum on the whole capital invested over a period of 16 years.

It is also to be remembered that it was the payment of two high dividends on Deferred Shares that raised the price and enabled the Company to obtain a premium on the new Deferred Shares of Rs. 96 lakhs. If this is set against the Rs. 80 lakhs paid in dividends, the Company has actually gained Rs. 16 lakhs.

सत्यमेव जयते

STATEMENT No. XCIX.

Statement showing dividends paid to different classes of shareholders.

Year.	Total Dividends.			ORDINARY.							DEFERRED.							6% Cumulative 1st Pref.			7½% Cumulative 2nd Pref.		
				Per Share. %				Total Amount paid.			Per Share. %				Total Amount paid.								
	Rs.	A.	P.	Rs.	A.	P.		Rs.	A.	P.	Rs.	A.	P.		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
1907-08	43,523	14	5	...				...			...				...			43,523	14	5	...		
1908-09	90,718	5	0	...				...			...				...			90,718	5	0	...		
1909-10	*Nil.*			...				...			...				...			*Nil*			...		
1910-11	1,37,278	6	1	...				...			...				...			1,37,278	6	1	...		
1911-12	2,17,495	1	6	...				...			...				...			2,17,495	1	6	...		
1912-13	3,68,424	15	10	...				...			...				...			3,68,424	15	10	...		
1913-14	12,37,384	9	3	4	8	0	6	8,97,115	8	0	...				...			3,40,269	1	3	...		
1914-15	18,00,994	11	3	6	0	0	8	11,96,244	0	0	7	8	0	25	1,68,750	0	0	4,36,000	11	3	...		
1915-16	39,18,750	0	0	11	4	0	15	22,50,000	0	0	54	2	8	180½	12,18,750	0	0	4,50,000	0	0	...		
1916-17	54,18,750	0	0	15	0	0	20	30,00,000	0	0	87	8	0	291	19,68,750	0	0	4,50,000	0	0	...		
1917-18	54,18,750	0	0	15	0	0	20	30,00,000	0	0	87	8	0	291	19,68,750	0	0	4,50,000	0	0	...		
1918-19	11,37,500	0	0	4	0	0	7	8,00,000	0	0	...				...			3,37,500	0	0	...		
1919-20	47,65,625	0	0	12	0	0	16	24,00,000	0	0	60	13	4	202¾	13,68,750	0	0	4,50,000	0	0	5,46,875	0	0
1920-21	53,05,208	5	4	12	0	0	16	24,00,000	0	0	60	13	4	202¾	13,68,750	0	0	4,50,000	0	0	10,86,458	5	4
1921-22	44,95,995	4	0	2	4	0	3	7,86,620	4	0	...				...			4,50,000	0	0	32,59,375	0	0
1922-23	4,50,000	0	0	...				...			...				...			4,50,000	0	0	(Not paid).		
	3,48,06,398	8	8	82	0	0		1,67,29,979	12	0	358	5	4		80,62,500	0	0	51,21,210	7	4	48,92,708	5	4

STATEMENT No. C.

Note by the Tata Iron and Steel Company on the Representation of Mr. Homi.

The Board have asked that the Steel Company should examine the lengthy statement laid before them by Mr. Maneck Homi. Mr. Homi has himself admitted in evidence that he has no expert qualifications and experience such as one would expect from any one setting out to examine impartially the different conditions existing in India and America in the Steel Industry. The value of his judgment may be shown by the fact that after a few months' experience as an ordinary workman in America he considered himself fit for the post of Superintendent of the new Coke Ovens in our plant. In the original statement which he showed to us he thought fit to threaten the Steel Company with what he described as exposure before the Tariff Board if it did not fall in with his views of his own value. As the Board has said that it is not for it to state on what precise points it desires the statement examined, it is necessary to review the whole document, and first we would wish to make a few general remarks which apply to the methods adopted in this document of comparing figures without understanding that they may apply to conditions so different as to be wholly incapable of scientific comparison.

It is not pretended that there may not be room for improvement at Jamshedpur; it is not to be thought of that during the bustling years of the war and its aftermath, the boom, when production was the main business and reduction of costs secondary, slackening of practice might not have crept in. When all the world has gone slack when, as Mr. Hugo Stein said last Summer in Berlin, the production in Germany per head has been reduced to 70 per cent. of the pre-war, when Railways, including Indian Railways, have run down, and when the temper of labour everywhere is against efficiency, Jamshedpur cannot pretend to be exempt from the world maladies and to have sustained the standard of the highest possible efficiency. The best efforts of Jamshedpur would be limited by the condition of transport, labour, raw material, markets, taxation and political, commercial and employment conditions in other countries. The best efficiency is also limited by the finance available for the support of that efficiency.

It should not be forgotten that the production of steel continuously regularly, of the best quality and at cost under price for years together -in India and under Indian conditions—is in itself a matter of congratulation which did not exist before, though attempts have been made since the days of Heath, the friend of Charles Dickens. The conditions in India for the production of steel in hundreds of thousands of tons are not at present suitable; contrary to the statement often made, there is nothing favourable beyond iron ore. The coal is inferior to what is obtainable in the principal steel centres. Bricks and important raw materials for Open Hearth furnaces are several times as costly as the silica bricks to American Steel Works, and the cost of labour per ton of steel product must be higher owing to conditions of work. It is frequently forgotten that the Steel Company works 8 hours shifts as against the 12 hours shifts of the world's practice till recently, that its practice is limited to small furnaces owing to its very limited market; that its climate and the impossibility of recuperation in the evenings makes even the shorter hours a burden to the imported labour unless largely assisted by Indian Mistries and artisans generally.

The result is that there will be as many Europeans or Americans in an Open Hearth Furnace as there are in a European or American furnace of the same size and there would be, in addition, a large number of Indian artisans. The Europeans would be paid, perhaps, 50 per cent. above what they would be getting in Europe or America so that, if the product per worker in a furnace was the same as in Europe or America, still the labour cost per ton must necessarily be higher, unless the Indian practice were better. Remembering that the European at Jamshedpur works only 8 hours a day, remembering the limitation of bricks and the shorter life of the furnaces owing to climatic conditions, the product per European would be less at Jamshedpur than in Europe or America. The product per workman engaged on ingots would be ridiculously smaller because the total number would include coolies paid at the rate of 7 as. to 10 as. a day in order to get cheaply done that grade of labour which is too low for people paid on an average Rs. 1,000 a month. In fact, the international comparison of the product per worker is a crime unless the workers in the countries compared stand on more or less the same footing. A superior labourer may be replaced by 30 coolies, and yet there may be economy because the superior labourer may be getting fifty times the daily wage of the cooly. The product per worker in this case would be reduced to one-thirtieth while the cost per ton would be less than two-thirds.

The same maladroitness of comparison comes in in the matter of raw material per ton of product. Obviously the amount of raw material depends upon the quality of the raw material itself, upon the quality of other raw materials in association, upon the quality required to be put on the market and upon the size and construction of the plant in which these raw materials have to be converted into products. Let us illustrate this in the case of the Blast Furnaces. The amount of pig iron in any tap depends upon the quality of the charge on the furnace, essentially it depends upon the proportion of iron in the iron ore. The process in the furnace is the divorce of the metal in the ore from the impurities of the ore. The prime object of coke is to produce heat. At the same time it acts as a reducing agent for divorcing the iron from its oxygen, but the coke is not carbon only but carbon, ash and other impurities. If the ash in the coke in one furnace be twice as high as the ash in the coke in another, say, increase from 12 to 24 per cent. then the carbon is diminished from, say, 87 to 75 per cent. and, therefore, for carbon alone the coke required would be 16 per cent. more to detach the unwanted oxygen. If the temperature required be 900° Centigrade, an enormous amount of heat is necessary to keep the fires burning and the amount of coke necessary would depend upon the thermal power of the coal used. The thermal power of the Indian coal is roughly two-thirds of the thermal power of English or American coal. The amount of flux depends upon the total amount of impurities in the ore, the coke and the flux itself which have to be carried away in solution in the liquid lime or magnesia so as not to mix with the liquid metal from which they are separated out by difference of density. These impurities are bad conductors of heat and in proportion to their admixture in the raw materials more coke would be required to generate the heat required. Then again, the amount of coke would probably depend upon the structure of the furnace itself and then once more the amount of coke per ton of pig would depend upon the kind of pig to be made. Foundry pig is more silicious than the basic, and the higher silicon would require more heat in the furnace and, therefore more coke. If it is 3 per cent. silicon pig, the amount of coke required would be very considerably more than for basic pig, or for No. 4 foundry.

It may therefore be seen that it cannot be a matter of common knowledge even to amateurs, let alone experts, that 2,000 lbs of coke per ton of pig is the standard. So far is it from being the standard that the same furnace on different days would require different amount of coke and different furnaces on the same day would require different amounts of coke. For one day lately it was reported that Furnace " B " had got down to less than 2,200 and its production which we now take to be 250 tons a day had gone to 368.

The Blast Furnaces " A " and " B " had been originally designed for 175 tons each. The actual production has always been better. In 1916 the bosh of the furnaces was enlarged in order to provide for a percentage of higher production. It commended itself to the Board for the higher production, though it was not ignored that the amount of coke per ton of pig and even the cost per ton of pig might be increased thereby. It was still worth the Company's while to enlarge the hearth and bosh ; it would have been stupid not to have done it because the profit per ton was, in those days, in the neighbourhood of Rs. 90 a ton of pig ; and, if the enlarged furnaces could give only 3,000 tons a month additional, they would have added about Rs. 32 lacs of profit a year. For a critic to denounce our practice because the coke per ton of pig or the cost per ton of pig is larger than it was elsewhere would be to forget the very elements of business ; and when it is said that it is a matter of common knowledge that 2,000 lbs of coke per ton of pig is the standard, the answer may confidently be made that in the very first estimate, before the Company had been floated, made by competent people who had consulted other competent people and not by students the amount of coke requirable per ton of pig was stated to be 1¼ tons or roughly 2,800 lbs. This appears in the first report on the project by Messrs. C. P. Perin and C. M. Weld. Mr. Perin and his partner, Mr. Marshall, together with Mr. Julian Kennedy and his partner, Mr. Sahlin, have not only endorsed those figures, but seen the furnaces at work. Messrs. Perin and Marshall have supervised the operation of the furnaces for months each separately and, if their anticipations and their actual results have been different from what has been put forward as a matter of common knowledge, it must be assumed that the common knowledge is only the common knowledge of those who consult a technical work, and do not know how to apply its statements to different conditions.

The amount of silica bricks and its cost per ton of ingot is equally indefinite. The cost of brick and its life are not the same everywhere, nor has the cost any relation to life, and the life of an Open Hearth Furnace depends upon other things than bricks also, for example, the dolomite floor of the furnace and the quality of dolomite may be different in different countries. The production of an Open Hearth Furnace depends upon the number of heats that the furnace will stand before requiring to be renewed and also on the number of hours for each heat. When the furnace collapses a certain amount of unproductive time is required for renewal, and the fewer the number of heats that the furnace stands the larger the cost in bricks per ton of ingot because there would be more cost of renewal and there would be less ingots to charge them to. It may be that it may be possible by a more expensive brick originally and at each renewal to prolong the life of an Open Hearth Furnace in which case it would be foolish to be governed by the standard cost of brick per ton of ingot and thus be bluffed from using the more expensive bricks. The profits of the additional life and, therefore, of the additional ingot and the punctuality of delivery of all steel sold would far more than repay for any departure from the standard cost of brick per ton of ingot, and it is not clear that there would be really any loss. The more expensive the brick at each renewal there might be fewer renewals and more ingots and, therefore, there might be really less bricks and less cost of bricks per ton of ingot. It is all a matter of calculation. There are no standards. Life of a furnace depends upon the close watching of the chemical processes within the furnace, and in the climate of India the watching may not be possible to the same extent as in other countries. Again, the actual production that is considered is the production of standard material and the Indian State Railways specifications are known to be the hardest in the world and the inspection at Jamshedpur is not the least hard in the world. It may be possible at each heat to obtain more ingots upto a less exacting standard than that of the Indian State Railways specifications. It would be a grave mistake to do so.

There seems to be an idea in some minds that, if the costs were better watched in Bombay and also by Bombay's continuous observation at Jamshedpur better results could have been obtained. Such critics show ignorance of what has been done. The members of the Tata firm are frequently and alternately visiting Jamshedpur sometimes for three months at a stretch. In the first years of operation the Agents of the Company, at their own cost, brought out Mr. Darlington to permanently reside at Jamshedpur and to watch the operation there and report it to the Directors with his comments. Mr. Darlington was selected for the Agents by Sir Thomas Holland who had then retired from India, and the appointment itself was made in consultation with the then General Manager, Mr. Wells, who had accepted that arrangement. But that arrangement did not work. Mr. Darlington had not the knowledge of steel that the General Manager had, and the General Manager had not the knowledge of steel that the General Superintendent had and the General Superintendent had less knowledge than the Superintendent of the Open Hearth. Under new conditions when things are likely to go badly at first and with a crew of Germans whose social life was different from that of the English and the Americans with whom they had to mix and who did not know the language either of the country or of the Superintendents of the plant—under such conditions there were differences of opinion as to how the plant should go, and the Agents' representative had to take sides which he was not qualified to take; and ultimately it was considered best to withdraw this element of the organisation. Since the plant began operation it has had the supervision, outside the operation staff, of Mr. Julian Kennedy, a renowned Metallurgist, his associate, Mr. Sahlin, and several times of Mr. Perin entirely apart from construction work. The plant has had several General Superintendents, Mr. Woolsey, Mr. Hoyt, Mr. Tutwiler and Mr. Alexander, and Mr. Alexander has been specially brought out because of his training and of his speciality in steel manufacture. The plant had been managed by a number of Managers, Mr. Wells, Mr. Woolsey, Mr. Shover and Mr. Tutwiler with some periods of acting managership of Mr. Perin and Mr. Marshall, and each one has been free to give effect to his special ideas both as General Superintendent and as Manager and as Consulting Engineer, and nothing good coming from such special ideas has been allowed to be lost. Further, there have been special reports and advice by eminent men. Dr. McWilliam, a very eminent Metallurgist, made a report in 1913 or 1914 to advise as to how the Open Hearth can best be worked. Mr. Watson, the Assistant General Superintendent of Homestead which is an old Carnegie plant now belonging to the American Steel Corporations, came out and spent several months in 1914-1915, and actually took charge of the steel and of the plant side by side with the Manager. In 1918 Dr. McWilliam once again spent several months in watching the whole plant and making a full report, and his suggestions have all been absorbed. His report is attached.

In 1920 a first-rate Cost Accountant had been brought out, Mr. McHenry, who compared American and Jamshedpur costs. Mr. Tutwiler and the Agents and the Board have had under consideration for two or three years the bringing out of an efficiency-Engineer, and only the need for reduction and retrenchment has postponed that. The Bombay Office had all the time produced concise studies of cost and production and their relation to the quantity, quality and price of sales and they are always circulated among the Directors. The Directors themselves meet the Management at Jamshedpur once every year and spend several days. Some of the Directors, having establishments at Jamshedpur, visit the plant on account of those establishments several times during a year. Messrs. Tata, London, provide a regular weekly news service, describing the happenings in the steel world—washings of coal, new or direct processes of steel, bye-products, capital cost per ton of product, the cost of different items in the cost sheets, their variations from year to year, the amount of raw material per finished product, the number of men per, say, 1 000 tons of product, accidents, town conditions, health, etc. The works are visited by steel makers and engineers from time to time and they make comments and sometimes criticisms, but the net result of it all is commendatory.

We suggest that any Member of the Tariff Board who shares the impression that so little had been done, that more might easily be done, if he desires should see the files of studies, of Directors' Minutes and the opinions of experts. If he feels overwhelmed by the magnitude of what he is to read through, a selection can be made of a representative character which would make him understand how much time had been given to co-ordination of production in order to make the production ultimately fruitful. Such a one is bound to be impressed by the record that exists of the studies of the increase of costs at Jamshedpur to nail down the causes and find out what are removable among them.

But the suggestion that there is not enough supervision at Jamshedpur misses the actual meaning of the organisation. There are Departments with crews and heads. Over several departments there are expert heads for co-ordination. There is a general head of the Works. Then, there is a head of Raw Material; several heads in the Town Departments, for example, Public Works, Sanitation, Medical and Land and cognate things. Then there is the General Office, Sales Office, Accounts Department with their respective heads. Then, over all these heads of Works and Town is the General Manager whose duties are precisely the duties of a Managing Director in other countries. Jamshedpur has had better supervision than that because a considerable office with staff are examining and overhauling cost-sheets, sales, purchases, accounts and dealing with finance, beside, in addition, Jamshedpur gets the benefit of the Consulting Engineers and specialists mentioned before. The Directors of the Tata Steel Company have more information than any Company ever gives its Directors.

We are asked to deal with Mr. Homi's figures. Some of them are positively wrong. They are always put in a misleading light. We take three glaring instances. He compares the workman per ton of product and gives 29,000 workmen at Jamshedpur. There were only about 16,000 workmen actually in operations. Having been three years at Jamshedpur in a very critical mood, he would have seen that the kind of work the classes of workmen do is not comparable in America and in India. He would have seen, for example, in the Open Hearth or any unit of the plant that the number of covenanted or quasi-covenanted hands is the same in the two countries for the same size of plant, and that the uncovenanted hands are the necessary supplement to Europeans working in the Indian climate under Indian conditions. There may be more of them and there may be less of them, but that is not a matter on which judgment could be given by Mr. Homi from his American experience as a workman in the Carnegie ovens and as a tourist picking up information from visits to plants. He again shows the large increase of the Steel Company's costs in the years from 1914 to 1921 ; he fairly enough gives American costs which have also increased during those years, but he puts them under another setting. He would have seen that the coal costs and the labour costs of America are returning to more or less pre-war whereas Indian costs are steadily increasing after the war in both particulars. We have shown how fallacious it is to measure the product per man in the two countries at different times. Two plants in the same district at the same time may be compared assuming the conditions to be the same for almost anything, Two plants in different districts and at different times may be compared to measure the difference of conditions of the two plants by the difference of results. Nobody complains of the inefficiency of Indian Cotton Mills because their production per man is a third, a fourth, or a fifth of the production in Lancashire. The same difference would be found in the production of Collieries per man, and those figures are public property. In 1908 Mr. Justice Brandeis, then Mr. Brandeis, a rising lawyer, appeared before the Inter-State Commerce Commission on behalf of the general public to resist the increase of freight rates demanded by the Railways on the ground that Railway efficiency had not kept pace with the general rise of efficiency, and he proved his point by showing that the American brick-layer, by a little science, had increased brick-laying per day from 700 to 2,700. The Scotch brick-layers who at that time were working at Jamshedpur were laying 500. The Indian brick-layers were laying less than 150. A part of the reason was due to the increased science and efficiency-engineering of the Americans, but apparently the conservatism of the Scotch brick-layer could not follow them there, and the conservatism and the low physique of the Indian brick-layer could not follow even the Scotchman.

A third set of figures paraded by Mr. Homi is the lower production per furnace as compared with 1917. The report of Dr. McWilliam shows that during the War period production with a little laxity in quality, if necessary, was the public service required, and the furnaces made a record. The efficiency of the furnaces necessarily ran down just as the Railways ran down through over-work in war and in the boom. As a matter of fact, when Dr. McWilliam made his second report he left on record that we had furnaces doing well in the charge of a very efficient Superintendent, the present Superintendent. If the production has still fallen it is because inspection has been speeded up.

The Steel Company has no occasion to be ashamed of itself. It is a pioneer plant which has succeeded where others failed. Others failed not merely to make profit but to make continuously steel of the required quality at *any* commercial cost. The Steel Company combines technical management with commercial and financial supervision. It stands to reason that, except for special occasions, the Steel Company cannot get the best imported men such as would be in the home countries and that, therefore, it must be considered lucky in getting those the Company has got. The Steel Company has no professional experts to pick and choose from near its door as the American and English plants would have. The quality of the raw material is a myth except for iron ore. The cheapness of Indian labour is a myth except in lower parts of metallurgy and in excavations and yet in presence of it, the Steel Company has produced first-rate steel, has done war service, and is doing peace service. It has never had a single year of loss. Contracts for sale and contracts for purchase of coal were both necessary to assure the continuous running of the plant. If we had not made the Railway contracts, we should have been entirely left. If we had not made the coal contracts and not bought the coal mines the plant would have stopped over and over again. It is only amateurs who think that cheapness in cost and high prices are the one end. The only end is that of service to consumer with as cheap a quality of goods as can be supplied, subject to considerations of regularity of supply, punctuality of delivery and constant inprovement of quality. This becomes a much more complicated problem and no reading in the Pittsburgh Library would give a real solution because they are the living aspects of the organism business and books can only give skeletons.

Paragraph 2.—No answer is required.

Paragraph 3.—The Board know just how far the writer's claim to an intimate acquaintance with steel manufacture is borne out by the facts. Mr. Homi worked in a very subordinate position in our Works for three years during which time he had nothing to do with the manufacture of steel. In America he appears to have worked as an ordinary workman in a Coke Oven plant for eight months.

Paragraph 4.—The views expressed here can only be due to want of knowledge. The steel industry in India suffers from many disadvantages. Its only great advantage is cheap ore. The disadvantages will be overcome in time and many are due to the post-war dislocation of prices, labour and transport. We take the writer's enumeration point by point.

Lack of suitable raw materials.—We have suitable raw materials though not as good, except in the case of the ore, as in America. The difficulty is to get them to the Works in regular and sufficient quantities.

Great distances.—Much of our limestone comes from Katni, a distance of about 500 miles.

Transportation difficulties.—Any one who does not know that all industries in Bengal and Bihar, and the coal and steel industries in particular, have suffered in the past ten years from transportation difficulties must be entirely ignorant of the industrial conditions of India. Repeated Commissions have examined the question and we need only refer to the evidence given by our Consulting Engineer, Mr. S. M. Marshall, before the Acworth Commission. We attach a copy of this (Appendix A).

Irregular supplies both of material and labour. -Is it necessary to disprove this assertion ? The irregular nature of the supply of Indian labour in all industry is notorious. It is especially marked in the coalfields. As to materials, we have not, for the past four years, been free of anxiety regarding our raw materials and we to-day have a blast furnace standing idle because up until the 1st November this year the railways could not carry the raw material required for it. And we have to carry an additional force of approximately 20 per cent. to provide for absentees.

The lack of scarcity of labour.—What exactly does the writer mean by labour ? Does he mean the American skilled labour with whose output he compares ours ? That is the labour required for production of steel. There is no question of scarcity of it in this country. It does not exist at all. It has to be imported.

The Board will find from the above that the writer either has no knowledge of the essential facts of the problem on which he offers his advice or that he has deliberately misrepresented them.

Paragraphs 5, 6, 7 and 8.—These paragraphs require no reply. We do not consider the writer's opinion as of the least value and we merely regret that his sneers at the Company would find publication in an official document.

Paragraph 9.—Here again the writer displays his ignorance of the facts. The total rail capacity of the Company after the Extensions will be about 200,000 tons. The contracts to which he refers absorb only about 60,000 tons. The Board are already aware of this.

Paragraph 10.—The argument here is that the Company should not have entered into contracts for rails but should have sold structural steel. If the writer knew anything of the conditions of the market in India, he would know that the country cannot absorb that quantity of structural steel. The Company therefore must sell rails if it is to live. The contracts were made in 1918, not 1920-21. We do not know what visit to Simla is referred to. No visit was made to Simla in 1920-21 by any representative of the Company in connection with the Rail Contracts. Mr. Tata visited Delhi in 1920 and Mr. Padshah with the General Manager and Mr. Peterson visited Delhi at the end of 1920, but this was in order to obtain a revision of the contract price from the Government of India. The Board will understand the extreme difficulty of meeting arguments which are based on an entirely imaginary and prejudiced conception of the facts. As to the figures given in this paragraph, we shall, later, ourselves give full statistics of the increases in cost.

Paragraph 11.—This paragraph attacks the Company's Sales Organization. Here again, the writer, who has neither knowledge nor experience of selling, displays his ignorance. Long contracts at fixed prices are no novelty in the Steel and Iron trade. We have many such with our Japanese buyers of pig Iron. We have many with the Railways. The Railways themselves have long term contracts for coal. When the Steel Company commenced work it had to meet prejudice and opposition. That it has done so successfully is proved by the fact that its chief difficulty has been delivery and not sale. We have always sold all that we had to make and we have sold it as the prices that others obtained or slightly better prices at the time when the bargain was made. We had to meet prejudice. A Member of the Indian Railway Board told us that he would undertake to eat every pound of steel up to rail specification that we produced. It was necessary that we should prove to the Indian Railways that we could supply steel to their specification. It is essential to the Steel Company or to any Steel Company in India that it should obtain the custom of the railways and of Government. That is the reason for the railway contracts which the writer criticises. We had to meet opposition. Obviously with a new Company we had to get buyers to accept our wares in preference to the wares imported from other countries. We have done that by allowing the large engineering firms and large dealers special discounts on price, and by doing so we have built up a very valuable association of mutual goodwill which is one of our great strengths. In India nine-tenths of our sales are ultimately in some form or other to Government, Railways, and public bodies. If we do not sell direct then the dealers who buy from us sell to them or the firms who take our steel, make it up into articles wanted by them. The organisation that is wanting is on their side not on ours, and they are endeavouring to arrange for this by the creation of the Central Purchasing Department. Even to-day when we offer rails to the Railways with whom we do not have contracts we are told that our tenders will be considered by their English Boards, and the Indian Stores Department in London, contrary to the rules laid down by the Government of India. They have recently told our London Office that in considering price they would not take duty into consideration. And we have even been asked to quote f.o.b. English Port as if our steel, if it is to have a chance of competing, had to be shipped first to England. In face of these and similar difficulties the Steel Company may well be proud of its sales record. Our great difficulty has always been delivery and to meet that and to arrange for the increased production which is now coming in we are organising a new Sales Department, which will be directly under the Head Office. There seems sometimes to be some idea that sales are a question of bargaining and haggling and being sharp about price. That seems to be at the back of the writer's mind in his criticism. But it is impossible for any steel maker to get any price other than the world price with such additions as his geographical position may give him. And we have always got that or a slightly better price and can prove that. We are quite prepared to produce Mr. Mott's Report if the Board wish to see it. But we know that it will not in any way assist them.

Paragraph 12.—The writer apparently entirely ignores the fact that we were bound by contract to supply a certain quantity of rails. Or does he suggest that we should have deliberately cheated the Indian Government and the Railways by reducing our production of rails and increasing our production of structural materials ? The Board, we presume, require no reply to this.

Paragraphs 13, 14 and 15. Decreased Output.—Appendix B will interest the Board. It compares the output fuel and production per man in our Works and in English Works. Generally speaking, we do not propose to examine the writer's figures in detail because we understand he declines to give his authority for them and it appears to be a waste of time to examine figures which may or may not be correct and which rest on the word of an inexperienced student who may have recorded them incorrectly. We propose to use figures from our own records and we shall therefore merely deal here with the writer's assertions and inferences which are often wildly inaccurate.

Paragraphs 16 and 17.—We do not know what the argument here is, but the facts as to the increase granted to labour are not correct. Labour has been given increases of 25 per cent and again of 15 per cent since 1915 and also certain other concessions such as leave, provident fund, etc., which amount to about 12 per cent. When the writer talks of the "Theoretical Cost," he apparently talks of his own theories which, as they are based on no knowledge of mining, are of little value. Appendix 3 explains the increase in the cost of ore.

Paragraphs 18 and 19.—The writer's understandings and conceptions here are on the same basis, *i.e.*, a complete ignorance of the actual conditions. The negotiations for the coal contracts were made before the Collieries were bought. He does not apparently understand that coal in the ground is not the same thing as coal loaded into wagons and delivered at the Works. When you are drawing about 252 wagons of coal daily to the Works, it is an advantage not to draw them all from the same pit or along the same siding. It would not in fact be possible.

Paragraph 20.—The first statement of fact in paragraph 20 is again entirely false. Messrs. Kilburn were the Agents of the Collieries which we bought, and one of the conditions of the sale was that they should continue to be the Agents. We have never had any other Agents. The Board have examined the Mining Engineer to the Railway Board and no doubt have satisfied themselves as to the reasons for the increase in the cost of coal in this country.

Paragraph 21.—This is merely an assertion. We will meet it with a counter-assertion. If the Collieries had not been purchased the Steel Works would have been closed several times in the past three years for lack of coal. To-day, as the Board know, the low price of our own coal reduces our costs considerably.

Paragraphs 22, 23 and 24.—We shall give our own figures.

Paragraph 25.—Already answered.

Paragraph 26.—We do not follow the argument. Does the writer suggest that we reduce the wages of labour ? Or does he mean that steel cannot be produced economically in India, and, if so, how does he reconcile this with paragraph 4 ? Or is it merely a personal attack on the Tatas ? These are merely vague assertions with very little meaning. If the iron and steel industry is so flourishing everywhere else in the world, how is it that one great party in England proposes to protect it and that the Chairman of an English Steel Company states publicly that the Iron and Steel Industry under present conditions, in England itself is dying ('Statesman' 30th November). And how is it that American producers state that they cannot produce pig-iron at present prices except at a loss ? *Vide* the "Iron Trade Review" dated 11th October 1923.

Paragraph 27.—We have already pointed out that the writer has apparently no knowledge whatever of the facts of the raw material, labour, and market conditions of the steel industry in India at present. His opinion therefore is valueless.

Paragraphs 28, 29, 30, 31, 32 and 33.—We do not think it necessary to answer these. The Technical Member of the Board has already shown in his examination of him that the writer possesses no real knowledge of the subject. Appendix C deals with the question.

Paragraphs 34, 35 and 36.—The argument here appears to be that the Steel Company should be dispossessed of the coal and other properties which it has purchased. We presume the Board require no answer.

Paragraphs 37, 38 and 39.--This compares the wages of labour in America with the wages of the ordinary coolie in India. We do not see that such a comparison is of any value. Many of the figures are not correct, but we will submit our own figures. Appendix D deals with these figures.

Paragraph 40.—Requires no answer.

Paragraph 41.—The argument, as we understand it, is that India is in an exceptionally favoured position. It may be noted that throughout these comparisons the writer entirely ignores the effect of the depreciation of the exchanges. That is of a part with his usual inaccuracy and misunderstanding of the problems, of which he writes so glibly.

Paragraphs 42 to 57.—The whole of this comparison is vitiated by the writer's misstatement as to the labour employed by the Steel Company in actual operation. We have given our own figure. It is nothing like 29,000 men.

We cannot say whether the American figures given are correct or not. But they are probably fairly accurate. The inferences drawn from them, however, are very wide of the mark. In paragraph 43 he compares the average annual production per employee at our Works as 5 tons against 53 in the United States Steel Corporation. The actual figures in the case of our plant should be 11 tons. But even apart from this correction, there is nothing usual in the fact that it may require many men to accomplish in this country what one man accomplishes in America. The following figures obtained from the Collieries Department regarding the comparative outturn of the American and Indian miner with the same appliances may interest the Board :—

	Indian Tons per day.	American Tons per day.
Mining by hand methods	1·3 to 2 (two)	6 to 10 (depending on thickness of seam).
Machine cut coal	4½ to 5	15 tons in 5 ft. to 6 ft. seam and 20 tons in 8′ to 9′ seam.

In the textile industry it is quite usual to see three and even four men in this country where one is employed on the same work in Lancashire.

The following figures regarding brick-laying, although a little out of date, will also interest the Board :—

American bricklayers laid	2,700	bricks per day.
Scotch ,,	500	,,
Indian ,,	150	,,

These figures were obtained by us in 1908. Another very good example is a comparison of the western operative's use of a wheel-barrow as compared with the Indian coolie's methods. The writer has no understanding or knowledge of the problem of which he speaks although it is well-known to every employer of Indian labour. In an Open Hearth Furnace in America the same number of men would be employed as we employed in the shape of covenanted labour in our Open Hearth Furnaces, but in this country, as the European cannot stand up to the climate in the same way and also is required to train Indian labour, he has to have associated with him to do the physical and manual labour a considerable number of men, who are really unskilled labour and often little better than coolies. To compare the production of a labour force organised on those lines with the labour used in England or America is absurd. The real test of comparison is of course the cost per ton. This deals with the elaborate arguments contained in paragraphs 42 to 56. The Technical Member of the Board has already in his examination exposed the fallacies as to the small amount of work done by the veritable army of women employed in loading coke. Appendices D and E deal with this argument.

Paragraph 56.—We do not think that any person having the least knowledge of the manufacture of iron and steel or indeed of any manufacture would consider that it was an advantage (and as is suggested, an enormous advantage) to employ Indian labour or that it is notoriously cheap. Inefficient labour is not cheap. We shall in time make it efficient if the manufacture of steel in this country continues.

Paragraph 57.—We do not understand the writer's axiom of economics. He is confusing cost with price.

Paragraph 58. —Apart from anything else, it is obviously absurd to compare the practice of plants varying in size, varying in position, varying in quality of raw materials used, varying in product and varying in labour by a system of extracting figures and making simple mathematical comparisons. Two plants in the same district working on the same lines might be compared with advantage, but to compare a plant in America with a plant in India and to expect the same results without making allowances for different conditions and without possessing the necessary technical knowledge to enable one to make such allowances is a mere waste of time. To imagine further that by lumping together the figures of different plants admittedly of widely varying conditions, labour saving devices, products, etc., will be to eliminate the errors and not to increase them is even more ridiculous. However, as the Board desire us to examine this obviously erroneous comparison, we ourselves submit a comparison between our costs and recent costs in the U. S. A. and have explained the reasons for the difference. The figures in the statement we are asked to examine may be accurate enough in some respects, but the comparisons are of no value as they are entirely vitiated by the obvious prejudice displayed in the presentation of them. For the years 1914 to 1921, for instance, the writer shows the average wage of labour employed by us as varying from 5 as. to 6 as. 6 p. a day as compared with Rs. 5 and Rs. 9-6 in the U. S. A. There might have been some sense in his comparisons if he had compared the average wage of an ordinary skilled artisan in our Works with the corresponding wage in America. The wage of 0-6-6 per day given in his statement is the wage of the common coolie who can in no sense be compared with the labour to which he has compared it. The fallacy is very plainly brought out in his paragraph 64. Appendix D deals with this point.

Paragraph 65 is merely an expression of pious hope and has no particular meaning.

We do not understand what is meant by paragraph 66.

The writer has not given any figures for the general works expenses in the U. S. A. He compares the increase in general expense from 1914 to 1921 without any reference either to the increase in production or the fall in the value of money and also without reference to the items which are included in the general works expense. Such a comparison is obviously valueless.

Paragraph 67.—An ordinary plant of this size in America would have as technical managers seven men while we are at present employing two. Most of the statements in this paragraph are incorrect. The General Manager has one personal assistant; the Chief Accountant also one; the General Superintendent also one. The last sentence is sufficient to show the writer's prejudice against the Company.

Paragraphs 68, 69 and 70.—The writer apparently poses not only as an expert on the Blast Furnaces, the Open Hearth, the Rolling Mills, Raw materials and labour but also on accounts, cost accounts, sales, records and stationery. We take it that we are not required to answer criticisms of this nature.

Paragraph 71.—The Machine Shop has been fully occupied up to the present on constructional work for the Greater Extensions. This has saved the Company a considerable sum of money in its capital expenditure. Appendix F deals with this.

Paragraph 72.—The Electrical Department in this country must necessarily carry a large quantity of stores and spares. It is obviously impossible to risk a shut-down of the Works in the event of a break-down until necessary spares can be obtained from America or England. Appendix G deals with this.

Paragraph 73.—This is dealt with in Appendix H.

Paragraph 74.—We have already explained our difficulty in the matter of bricks. The repairs of the Open Hearth Furnace have been dealt with in a report of Dr. McWilliam which we have put in evidence.

Paragraph 76.—We have given our own figures. We have already pointed out the fallacies as to the advantages enjoyed by the Company in the matter of labour and raw materials.

Paragraph 77.—Ditto.

Paragraph 78.—Ditto.

Paragraph 79.—No remarks.

Paragraph 80.—In this paragraph the writer refers to the opinion of several practical men consulted by him whose names are not given. We can put against this an experience of over 13 years in the matter of the blast furnace production of pig iron.

We may point out to the Board that the consumption of coke per ton of pig iron varies according to the class of pig iron being manufactured. It varies in the same furnace from day to day, week to week and from month to month. It varies between similar furnaces in the same plant on the same day. The writer's ignorance of this subject is plainly shown by the extract from the "Iron Age" of the 8th December 1921, which we attach, which shows that contrary to his statement the amount of coke required to make 1 ton of pig iron in Birmingham, Alabama, in U. S. A., was 1·6 tons at that time. We are afraid we are not prepared to accept the writer's opinion against the practical opinion and experience of our own experts who have succeeded in the past in manufacturing pig iron at a lower cost than any one in the world. His own statements show that he has the vaguest knowledge of the working or chemistry of the Blast Furnaces.

Paragraph 81.—Ditto.

Paragraph 82.—Appendix E deals with this. The writer has no experience of coke making in India.

Paragraph 84.—We have already dealt with this fallacy. We do not employ more covenanted men per furnace than would be employed in America. The important figure as already stated is the cost per ton. Leaving the writer's other arguments regarding the blast furnace of which he has no experience nor knowledge, we would point out that we entirely deny the statement that the rate of production of pig iron in the present installation is going down. He appears to have omitted to notice that the furnaces which he refers to are at present worked on Foundry iron as opposed to basic iron. The Furnaces are working as well as they have ever worked and our new furnaces are fully up to expectation.

Paragraphs 94 to 137. Regarding Open Hearth Department.—Much of this is entirely technical and will be quite unintelligible except to technical men. It is rendered still more unintelligible by the writer's lack of the necessary technical knowledge. As we are required to meet it, we put in in evidence the special report of the late Dr. McWilliam, Assistant Professor of Metallurgy of the Sheffield University, on our present Open Hearth plant (Appendix I). We also give statements comparing the costs of the present Open Hearth with recent American costs for which we can vouch (we understand that the writer declines to give the source of his information) and we propose to put up for examination Mr. Alexander, our General Superintendent, who has had a large experience of steel manufacture in America and has just returned from that country.

We add a report by the same consultant on certain minor technical matters connected with the manufacture of steel merely in order to show the Board the detailed attention which the Company has given, and continues to give, to the efficient production of steel.

Generally speaking, we may say that we should not have built the three additional stationary furnaces had it not been for the war. In our opinion, this type of furnace is not suitable to India and the production of it will always be lower than the production in similar furnaces in America, but we were requested by Government to do everything we could to increase our steel production for war purposes, and in order to assist them we constructed these furnaces as they were the only furnaces which could be built in this country by ourselves and with our own material. The decrease in production which has been a marked feature since the War, is due mainly to the tightening of the specification for steel by the Metallurgical Inspector to the Government of India, who is the Technical Member of the Board. During the War, the essential point was quantity, not quality. After the War we had to get back to the pre-war standard and have succeeded in doing so, but our production has naturally been reduced.

The writer's statements are full of inaccuracies, but the matter being so highly technical, we think it more advantageous to give the Board correct figures and inferences rather than to correct his misstatements.

We may point out with reference to paragraph 113 that Chanda Ore is not used in the Steel Furnaces.

The Technical Member of the Board has already corrected several of the other gross misstatements.

The statements regarding the method of payment of the bonus in paragraphs 124 to 131 is apparently designed, and intentionally designed, to re-awaken the labour agitation which has done such incalculable harm to the Company. We may say that we offered a bonus system to the uncovenanted employees and that they refused to accept it unless the bonus was given them in addition to their present increased pay. Obviously the Company could not accept any such proposal (Appendices J & K).

There is nothing particular to notice in paragraphs 138 to 154.

If the figures in paragraph 150 are correct and are the result of ten years' manufacture of steel in this country, we do not think the Company can be said to have done badly in the matter of the production of rails, but we do not know what he has included in these figures.

Paragraphs 155 to 169.—We attach a note (Appendix L) which shows quite plainly that the writer does not understand the problem with which he deals in these paragraphs.

Paragraph 170.—We do not think that any one will suppose that the writer is competent to express an opinion on the design of a plant such as the Greater Extensions.

In paragraph 172 he has obviously entirely misunderstood Mr. Peterson's evidence which was that the real ground for protection was that the Company was now, as a result of the Extensions, in a position to produce nearly one half of the total demand of India for steel.

Paragraph 173.—The Greater Extensions, in their present form, were not sanctioned in December 1916, but in 1918. The comparison between the erection of a plant in America and the erection of a plant in a country where the plant was not made during the War when the seas were infested by enemy submarines is a good example of the writer's sense of proportion, we consider.

Paragraph 174.—This is a typical example of the ill-informed and prejudiced criticism which is displayed throughout this document. The Batelle Furnace has paid for itself over and over again.

Paragraph 175.—The Plate Mill was specially rushed at the express request of Government in order to obtain the plates required by Government for War purposes in India.

Paragraph 176.—The Wilputte Coke Ovens were not started in 1917 as appear to be alleged in this document.

Paragraphs 178, 179, 180, 181, 182, 183 and 184.—Obviously the writer knows nothing about the Duplex process.

Paragraphs 185, 186, 187, 188, 189, 190 and 191.—The capacity of the mills is admittedly in excess of the total steel capacity. On a point of this kind we prefer the opinion of our Consulting Engineers to that of the writer.

Paragraph 196.—This appears to be a prejudiced criticism of the personnel of our Management. We would point out that, judging by this document, the writer himself professes a knowledge of all the multifarious branches which, according to him, no one man can possibly know.

Paragraph 197.—This, of course, is nonsense.

Mr. Andrew Carnegie was in the fortunate position of being able to obtain his choice of men immediately outside his office door. That is not the way in which new industries can be started in new countries.

Paragraph 198.—We suggest that an enquiry into the precedents of the writer might shed some very interesting light on the reasons for his evidence. We may state that he had on two occasions—on the last only just before this document was put in—applied to the Company for employment which was refused.

The remainder of his statement consists merely of vague statements and assertions which are not worth answering.

However as the Board have called for a full and detailed reply to all the points raised by the writer, we attach to this note detailed replies from the various Heads of Departments dealing with the writer's criticisms on the Departments under their charge. We trust the Board will attach due weight to the statements of competent technical officers who have many years of actual experience both in England, India and America. We also attach a copy of Mr. Homi's statement after filling in the correct figures from our own records.

Extract from "The Iron Age" dated 8th December 1921.

Estimates Present Pig Iron Production Costs in Three Centers :

In an article on "The Manufacture of Pig Iron" in the 'Griffin Bulletin' of November, published by the Griffin Wheel Co., Chicago, G. S. Evans, Superintendent, Cupola Division, presents estimates of the cost of making pig iron in the three principal producing centers, based upon materials acquired at current market quotations :

	PITTSBURGH.		CHICAGO.		BIRMINGHAM.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
Ore	1·8	12·42	1·8	10·17	2·7	4·89
Limestone	0·4	0·48	0·4	0·48	0·4	0·40
Coke	1·0	4·50	1·0	7·00	1·6	8·00
Miscellaneous supplies and relining		0·81		0·81	..	0·94
Labor	..	1·08	..	1·08	..	1·35
Cost per gross ton	..	19·29	..	19·54	..	15·58

STATEMENT No. CI.

Note by the Tata Iron and Steel Company regarding the efficiency of the Works.

In the course of the evidence, the attention of the Board has been drawn to two important questions vitally affecting the efficiency of the Works :—

(*a*) the increase in the consumption of raw materials and coal and (*b*) the decrease in the output per employee per annum in tons.

The following tables compare the statistics for Great Britain with the experience of our own plant :—

(English figures from 'The Iron and Coal Trades Review' dated 8th December 1922.)

TABLE I.

Comparison of Consumption of raw materials and production at Blast Furnaces :

ENGLISH FIGURES.

	Ore used.	Coal used.	Lime-stone used.	Output per furnace.
1912	100·0	100·0	100·0	100·0
1918	99·7	116·3	166·5	83·6
1919	101·1	125·3	188·5	80·7
1920	102·2	122·6	184·6	84·0

TATA IRON AND STEEL COMPANY.

	Ore used.	Coal used.	Lime-stone used.	Output per furnace.
1912-13	100·0	100·0	100·0	100·0
1918-19	102·6	115·20	133·2	162·14
1919-20	98·8	114·15	119·6	129·03 (Strike year)
1920-21	100·2	108·91	125·5	130·21

TABLE II.

Comparison of Consumption of Fuel in Steel Works per ton of Plates.

	Total
1912	100·0
1918	141·0
1919	150·7
1920	145·1

We cannot compare this as we have just started making plates but it shows the great increase in the consumption of fuel in Great Britain.

TABLE III.

Output per employee per annum in tons.

	English figures.		Tata Iron and Steel Co.	
	Pig Iron	Steel	Pig Iron	Steel (O.H.)
	Tons.	Tons.	Tons.	Tons.
1918	315·8	89·3	...	...
1919	245·5	50·8	175	15
1920	226·3	59·0	175	151
1921	254·0	..	187	153
1922	..	..	137	131

NOTE.—The figures cannot of course be compared with each other as we do not know what is included in the English figures. The decrease in 1922-23 is due to the strike.

The attached chart showing the results in the United States Steel Corporation during the years 1901 to 1922 and the variations in the output in tons per employee which range from 38 tons in 1908 and 41 tons in 1921 to 63 tons in 1912 and 62 tons in 1915 to 1916 will show how this figure varies even for a large Corporation such as this.

STATEMENT CII.

Statement by the General Superintendent of the Tata Iron and Steel Company, on the representation of Mr. Homi.

MR. C. A. ALEXANDER, GENERAL SUPERINTENDENT.

Qualifications.

Graduate Engineering, Haverford College Class, 1905.

1905-06.—Jones and Laughlin Steel Co., Pittsburgh, Pa. Engineering and Construction work.

1906-15.—Cambria Steel Co., Johnston, Pa. Engineering Open Hearth Foreman and Superintendent.

1915-16.—Donnar Steel Co., Buffalo, N. Y. Acting Assistant Superintendent.

1916-17.—Standard Steel Works Co., Burnham, Pa. Superintendent, Open Hearth Department.

1917-19.—American Tube and Stamping Co., Bridgeport, Conn. Superintendent, Steel Plant.

Statement by the General Superintendent on the representation of Mr. Homi.

"I have read this representation over and due to lack of time I cannot enter into much detail but can only point out a few discrepancies and misstatements or facts without any effort and will say that, if I had time to go into detail, I could point out many more.

In a general way, after my experience in various Steel Plants in America and my four years of experience in India and having read this article I would certainly say that it was written by a critic who had collected a lot of data which he does not know how to apply and who is not qualified to analyse or appreciate the difference in conditions existing in steel plants in the two countries. No one is qualified to criticise conditions at Jamshedpur unless he has remained here in intimate touch with all operations for several years. There are many factors here that are unknown in the steel business in U. S. A. or England and one has to remain a considerable length of time in an executive position in order to appreciate them. Difficulties have been encountered and met and difficulties will continue to be encountered and will have to be met, and the same efficiency cannot be obtained here now as has been attained in America. I admit that the solution of many of our troubles is within the province of expert consultants in practice, but it will take a considerable length of time to work them out under the conditions existing in Jamshedpur. I claim that in order for one to be qualified to properly criticise things at Jamshedpur, they also should be expert consultants with intimate and detailed knowledge of all departments.

I consider that it is not within my province to comment on any of the policies past, present or future, or on any things which are outside my jurisdiction and so I confine myself to the Operating Department. As I have stated before, the shortness of time will not allow me to go into detail but I can pick many flaws which are outstanding and one must realise that if this can be done so easily with no study, many others could also be found.

In his appendix he gives as the main headings in which vast savings can be made as follows :—

1. Reduction of labour.
2. Elimination of waste in Boiler fuel.
3. Utilization of internal resources for the fuel needs of smelting and heating in the Open Hearth and Mills.
4. Loss in pig iron production.
5. Economics effected in practice and procedure at the Blast Furnaces.
6. Loss in steel ingot production in the Open Hearth.
7. Improvement and economy in practice at the Open Hearth.
8. Efficiency in maintenance and running of the Mills.

I will now deal with the various items.

1. *Reduction of labour.*—The writer goes on to prove that the force employed at Jamshedpur is ten times that necessary for a plant of its size, also that we should not need more than two Indian workmen to do the work of one in the United States or Europe. This statement is absolutely ridiculous. Taking the plant as a whole this cannot and never will be done, and this is one of the points on which a man is not qualified to speak unless he has occupied an executive position here for a considerable length of time. He also states that the Indian labour is capable of doing as much work as the immigrant labour in the United States. Having had experience with both I can definitely say that this is not so. As to the statement that the climatic conditions here are more than counterbalanced by the shorter hours of work and also by the disadvantage of 5 months of cold season in America, this is absolutely ridiculous, and one only needs to work in Plants in both countries to appreciate it. He compares the ratio of wages paid to the covenanted hands on the furnaces to that paid to the Indian workmen, and I would like to ask why he does not compare other departments or the plant as a whole. He takes the furnaces simply for the sake of his own argument, as it is here that we need the greatest percentage of covenanted hands. I also notice he says that the General Superintendent has two Assistants. I fail to know who they are.

2. *Elimination of waste in Boiler fuel.*—He maintains that all the money spent since 1920 for coal for steam-making purposes has been wasted. He says the reason for it being wasted is that there has been sufficient gas evolved from coke and pig iron making to supply all the steam required. I admit that as time goes on we will be able to effect greater economies in our Boiler Plant as well as in other departments, but such problems require time to be worked out and for the necessary changes to be made. I am not aware of any steel plant that has yet reached the ideal condition

of being able to run the whole plant from the gases evolved from the coke ovens and the blast furnaces. Problems like this require years of study and have proceeded, as far as they have, only in plants which have been in existence and well organised for a much longer period than is our plant here. It is all well enough to mention things like this, but it takes time to have them worked out and effected. We may not be getting maximum efficiency from our Boiler Plant but there are very few who do. I only recently saw an article in one of the American Trade Journals which stated that a survey of the Boiler Plants had been taken over a number of States and that the average efficiency of all was only about 60%, many of them falling to 50% or even lower and very few rising to the acknowledged maximum of from 75 to 80 per cent. If this is all that has been accomplished over a large area in the States in generations, what is to be expected in Jamshedpur within a few years ? This is only one of the many problems which remains to be worked out as time goes on.

Reference is made under the heading fuel that if more gas and less coal were used under the boilers thereby releasing tar and coke oven gas for use in the Open Hearth, we would experience no trouble from sulphur in the Open Hearth. We never have the slightest trouble with sulphur in our Open Hearth."

3 and 8.—Utilization of internal resources for the fuel needs of smelting, and heating in the Open Hearth and Mills. Efficiency in maintenance and running of the Mills.

" I shall not dwell much on this subject as you are more familiar with it than I. I only wish to say that it is largely a question of production both in the Open Hearth and in the Mills. I will not comment on the Open Hearth production as you will take care of that. As to the mill production I can definitely refute one statement which he makes which is that in America the product of the 40″ Blooming Mills is mostly in the shape of 4″ billets and that in spite of rolling this small section, their tonnage is many times that which we get here. This is absolutely wrong, and I defy any one to go through very many of the modern Blooming Mills in the United States to-day and find them rolling mostly 4″ billets. Quite the reverse is true. The big productions which are prevalent to-day on Blooming Mills in the United States were only obtained by the introduction of the Morgan Continuous Mill which resulted in not having to roll 4″ billets on Blooming Mills. There are some Steel Plants who still roll many 4″ billets on their Blooming Mill, in fact, I have seen 2 which roll down to inch and three-quarter billets but they roll much less tonnage than is rolled on Mills whose tonnage he quotes.

4. *Loss in pig iron production.*—I consider that it is unnecessary for me to comment on this, as I would only make the same statements which you would make.

Under the heading 'cost of making pig iron' a statement is made that better methods of cooling and condensing in the by-products coke plant would result in more by-products and that we should be getting 3 times the amount of tar per ton of coal decarbonised that we are at present. This cannot and never will be done, as you cannot get out of coal something that is not in it.

5. *Economies effected in practice and procedure at the Blast Furnaces.*—I consider that it is unnecessary for me to comment on this, as I would only make the same statements which you would make.

6 and 7. Loss in steel ingot production in the Open Hearth.—A statement is made under this heading that 75 to 80 per cent. hot metal is more conducive to quick heats than lower percentage of hot metal. This is not true either in America or at Jamshedpur. It has been proven conclusively that the best mixture for the Open Hearth furnaces is in the neighbourhood of 60% hot metal and 40% scrap. In commenting on the Open Hearth yield, the writer has apparently been not well-informed and that in 1921 the system of figuring the Open Hearth yield was changed, thereby making such a big discrepancy between 1921 and 1922 and the preceding years. For one to criticise, one should have all information on the subjects with which he is dealing. By our present system of accounting, the yield of 92% which he quotes normal is absolutely impossible. In the consumption of ferro-manganese in the open hearth the writer apparently neglects to take into consideration the fact that we are compelled to make ferro-manganese additions in the furnace instead of in the ladle on account of the quality of steel which we have to make. Also the Manganese content in our low carbon steel is about 50% higher than that required in America. We have not been using the so-called high-priced Chanda Ore for reduction in the furnaces for several years.

The writer criticises the installation of the Duplex plant on the ground that this method of making steel has not found much favour in England or in America. I do not think there is any plant in England that has used or is using the same process which we are adopting here. In England and in Canada, the Basic Bessemer Duplex process may have been abandoned, but ours is the Acid Bessemer Duplex process which is entirely different from that of the Basic Bessemer Duplex. If the rail specification of Canadian Railways bars the Duplex process, it bars the Basic Bessemer Duplex and not Acid Bessemer Duplex, as there is not an Acid Bessemer Duplex plant in Canada. He correctly states that the Canadian practice is based on British precedents but unfortunately he could not have known that the British practice was not similar to that which we are installing here.

He speaks of the shops being busy on repairs made necessary by somebody's carelessness or oversight, somebody's spirit of mischief or experiment, yet at the same time he maintains that the Indian workman is nearly as efficient as those in foreign countries. Does carelessness and mischief produce efficiency ?

He speaks of us having excess spares for the Electrical Department. When one takes into consideration that we are several thousand miles away from the source of most of our supplies I consider that we are much under-stocked rather than over-stocked. Quite frequently, we have to resort to all sorts of methods of patching up various electrical parts in order to keep running, simply because we do not have the necessary spares and the reason that we do not have them is that we have tried to keep down our inventory of spares as much as possible and thereby have less money tied up. As far as my knowledge goes, we have burned out one armature of a large unit and slightly damaged another since the starting of the plant. I am personally familiar with one instance where an armature was slightly damaged and had to be repaired. If we had the amount of spares which we are credited with having, we would have had another armature to put in immediately. As we did not have it, we had to repair the damaged armature here and suffer loss of production, simply because we were trying to keep down the amount of money tied up in spares.

Locomotives.—We had more than seven locomotives in service in 1919 and we do not have 22 in service now. This is simply a misstatement of facts."

STATEMENT CIII.

Note by the Tata Iron and Steel Company explaining apparent decrease in the production per man.

As the Board, in their examination, question us regarding the apparent decreases in the production per man which is shown by the figures in Statement No. 1 in the Printed Statement, we desire to submit corrected figures. We may explain that in column 5 of the original statement a certain amount of indirect labour has been included which should not properly be included for such a comparison, as such labour has nothing to do with the actual production of the product in question and is merely traffic labour employed for the most part in loading and unloading and shifting material and is principally coolie labour. We regret the inconvenience that has been caused to the Board by this, but we did not understand at the time that the statement would be used for this purpose. We now submit complete statistics showing the direct labour employed on these various departments from 1912-13 to 1922-23, and also the indirect. labour separately.

The actual tonnage per man can be compared for the later and earlier periods year by year but not as between one period and the other, as the system of recording the statistics has been altered.

Coke Ovens.

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13	154,971	6	657	663	234
1913-14	196,758	4	628	632	311
1914-15	196,683	3	656	659	298
1915-16	202,055	3	801	804	251
1916-17	230,533	3	920	923	250
1917-18	260,079	2	1,100	1,102	236
1918-19 (9 months) . . . . = to year 328,397 tons.	242,548	2	1,133	1,135	285
1919-20	331,372	..	1,795	1,795	185
1920-21	370,703	..	2,107	2,107	176
1921-22	359,923	..	2,234	2,234	161
1922-23	366,464	..	3,444	2,444	150

NOTE.—There was an alteration in the method of recording the labour Statistics about 1918. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

Blast Furnaces.

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13	128,238	28	846	874	147
1913-14	155,383	15	810	825	188
1914-15	160,587	13	743	755	213
1915-16	171,453	10	737	747	230
1916-17	154,553	9	699	708	218
1917-18	191,005	8	741	749	255
1918-19 (9 months) ← 217,108 tons	162,831	8	814	822	264
1919-20	229,445	7	1,301	1,308	175
1920-21	261,608	8	1,483	1,412	175
1921-22	283,190	8	1,504	1,512	187
1922-23	248,463	8	1,806	1,814	137

NOTE.—There was an alteration in the method of recording the labour Statistics about 1919. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

Open Hearth.

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13	31,385	68	900	968	32
1913-14	77,844	68	860	928	84
1914-15	96,182	55	750	805	119
1915-16	123,427	32	910	942	131
1916-17	139,433	31	903	934	149
1917-18	181,313	33	940	973	186
1918-19 (9 months) = 185,265 tons.	138,949	34	960	994	186
1919-20	169,796	36	1,029	1,065	159
1920-21	170,882	43	1,089	1,132	151
1921-22	182,107	43	1,148	1,191	153
1922-23	155,604	42	1,145	1,187	131

NOTE.—There was an alteration in the method of recording the labour Statistics about 1919. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

Blooming Mill.

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13	27,277	6	217	223	122
1913-14	58,745	6	198	204	288
1914-15	84,483	6	182	188	449
1915-16	108,104	5	178	183	591
1916-17	123,046	3	192	195	631
1917-18	153,089	3	237	240	638
1918-19 (9 months) = 164,169 tons.	123,127	3	261	264	622
1919-20	146,531	3	283	286	512
1920-21	150,357	3	289	292	515
1921-22	156,902	3	280	283	554
1922-23	138,440	3	291	294	471

NOTE.—There was an alteration in the method of recording the labour Statistics about 1919. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

28" *Mill.*

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13	16,445	21	730	751	22
1913-14	41,142	21	648	669	62
1914-15	57,003	21	641	662	86
1915-16	67,707	20	637	657	103
1916-17	68,859	18	893	911	76
1917-18	82,667	15	949	964	86
1918-19 (9 months) = 93,041 tons.	69,781	17	1,070	1,087	86
1919-20	87,985	16	1,108	1,124	78
1920-21	86,401	14	1,123	1,137	76
1921-22	96,273	16	1,271	1,287	75
1922-23	80,691	15	1,286	1,301	62

NOTE.—There was an alteration in the method of recording the labour Statistics about 1919. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

Bar Mill.

Year.	Production in	Covenanted employees.	Uncovenanted employees. Direct Labour.	Total Direct Labour.	Tonnage per head per annum.
	Tons.	No.	No.	No.	Tons.
1912-13 (8 months) = 4,027 tons. . . .	2,685	11	567	578	7
1913-14	7,730	11	541	552	14
1914-15	9,762	9	500	509	19
1915-16	23,293	7	527	534	44
1916-17	29,868	4	712	716	42
1917-18	41,223	3	902	905	46
1918-19 (9 months) = 42,943 tons. . . .	32,207	3	999	1,002	43
1919-20	34,242	3	1,021	1,024	33
1920-21	35,955	4	944	948	38
1921-22	29,598	4	824	828	36
1922-23	32,176	4	908	912	35

NOTE.—There was an alteration in the method of recording the labour Statistics about 1919. This more or less coincided with the end of the war. The figures for the years 1919-20 to 1922-23 can be compared with each other, or for the years 1912-13 to 1918-19. But the figures for the two periods cannot be used as a basis for comparison, as the system has been altered. Generally speaking the production per man will have fallen after the war, owing to the fact that we were not driving our plant so hard, that the quality of the raw materials has fallen off and that the specifications had been tightened up for steel. The fall in 1922-23 is of course due to the strike.

Coke Ovens.

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR.			Direct Labour.	Total Labour.	Tonnage per head per annum.	Wages per head per annum.
		Shop Labour.	Traffic Labour.	Total.				
	Tons.	No.	No.	No.	No.	No.	Tons.	Rs.
1912-13 . . .	154,971	175	89	264	663	927	167	161
1913-14 . . .	196,758	34	92	126	632	758	260	211
1914-15 . . .	196,683	13	48	61	659	720	273	184
1915-16 . . .	202,055	28	65	93	804	897	225	159
1916-17 . . .	230,533	42	131	173	923	1,096	210	197
1917-18 . . .	260,079	48	103	151	1,102	1,253	208	195
1918-19 (9 months) = 323,397 tons. .	242,548	59	825	884	1,135	2,019	160	177
1919-20 . . .	331,372	86	1,023	1,109	1,795	2,904	114	155
1920-21 . . .	370,703	94	570	664	2,107	2,771	134	215
1921-22 . . .	359,923	104	488	592	2,234	2,826	127	213
1922-23 . . .	366,464	164	497	661	2,444	3,105	118	209

Blast Furnaces.

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR.			Direct Labour.	Total Labour.	Tonnage per head per annum.	Wages per head per annum.
		Shop Labour.	Traffic Labour.	Total.				
	Tons.	No.	No.	No.	No.	No.	Tons.	Rs.
1912-13 . . .	128,238	73	47	120	874	994	129	409
1913-14 . . .	155,383	42	19	61	825	886	175	416
1914-15 . . .	160,587	27	136	163	755	918	175	314
1915-16 . . .	171,453	35	318	353	747	1,100	156	252
1916-17 . . .	154,553	41	238	279	708	987	157	254
1917-18 . . .	191,005	58	388	446	749	1,195	160	253
1918-19 (9 months) = 217,108 tons. .	162,831	65	776	841	822	1,663	131	286
1919-20 . . .	229,445	78	715	793	1,308	2,101	109	204
1920-21 . . .	261,608	131	679	810	1,491	2,301	114	294
1921-22 . . .	283,190	216	586	802	1,512	2,314	122	337
1922-23 . . .	248,463	197	336	533	1,814	2,347	106	305

Open Hearth.

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR.			Direct Labour.	Total Labour.	Tonnage per head per annum.	Wage per head per annum.
		Shop Labour.	Traffic Labour.	Total.				
	Tons.	No.	No.	No.	No.	No.	Tons.	Rs.
1912-13 . . .	31,385	74	. .	74	968	1,042	30	319
1913-14 . . .	77,844	81	7	88	928	1,016	77	505
1914-15 . . .	96,182	97	41	138	805	943	102	428
1915-16 . . .	123,427	127	57	184	942	1,126	110	463
1916-17 . . .	139,433	173	89	262	934	1,196	117	502
1917-18 . . .	181,313	263	188	451	973	1,424	127	616
1918-19 (9 months) = 185,265 tons. .	138,949	266	209	475	994	1,469	126	635
1919-20 . . .	169,796	296	218	514	1,065	1,579	108	556
1920-21 . . .	170 882	325	267	592	1,332	1,724	99	630
1921-22 . . .	182,107	349	120	469	1,191	1,660	110	691
1922-23 . . .	155,604	344	80	424	1,187	1,611	97	593

Blooming Mill.

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR.			Direct Labour.	Total Labour.	Tonnage per head per annum.	Wages per head per annum.
		Shop Labour.	Traffic Labour.	Total.				
	Tons.	No.	No.	No.	No.	No	Tons.	Rs.
1912-13 . . .	27,277	51	. .	51	223	274	100	477
1913-14 . . .	58,745	68	1	69	204	273	215	484
1914-15 . . .	84,433	95	12	107	188	295	286	510
1915-16 . . .	108,104	174	13	187	183	370	292	461
1916-17 . . .	123,046	168	13	181	195	376	327	437
1917-18 . . .	153,089	166	10	176	240	416	368	445
1918-19 (9 months) = 164,169 tons. .	123,127	176	16	192	264	456	360	401
1919-20 . . .	146,531	185	37	222	286	508	288	340
1920 21 . . .	150,357	186	15	201	292	493	305	474
1921-22 . . .	156,902	187	9	196	283	479	328	564
1922-23 . . .	138,440	195	8	203	294	497	279	498

28″ *Mill.*

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR. Shop Labour.	Traffic Labour.	Total.	Direct Labour.	Total Labour.	Tonnage per head per annum.	Wages per head per annum.
	Tons.	No.	No.	No.	No.	No.	Tons.	Rs.
1912-13 . . .	16,445	70	1	71	751	822	20	278
1913-14 . . .	41,142	51	2	53	669	722	57	373
1914-15 . . .	57,008	102	137	239	662	901	63	377
1915-16 . . .	67,707	195	168	363	657	1,020	66	415
1916-17 . . .	68,859	233	151	384	911	1,295	53	351
1917-18 . . .	82,667	275	88	363	964	1,327	62	414
1918-19 (9 months) = 93,041 tons. .	69,781	294	13	307	1,087	1,394	67	438
1919-20 . . .	87,985	323	165	488	1,124	1,612	55	377
1920-21 . . .	86,401	280	89	369	1,137	1,506	57	487
1921-22 . . .	96,273	304	54	358	1,287	1,645	59	450
1922-23 . . .	80,691	309	47	356	1,301	1,657	49	389

Bar Mills.

Year.	Production in	UNCOVENANTED EMPLOYEES—INDIRECT LABOUR. Shop Labour.	Traffic Labour.	Total.	Direct Labour.	Total Labour.	Tonnage per head per annum.	Wages per head per annum.
	Tons.	No.	No.	No.	No.	No.	Tons.	Rs.
1912-13 (8 months) = 4,027 tons. .	2,685	35	..	35	578	613	7	161
1913-14 . . .	7,730	35	1	36	552	588	13	205
1914-15 . .	9,762	48	39	87	509	596	16	211
1915-16 . .	23,293	100	140	240	534	774	30	290
1916-17 . .	29,868	109	168	277	716	993	30	248
1917-18 . . .	41,223	125	147	272	905	1,177	35	278
1918-19 (9 months) = 42,943 tons. .	32,207	158	51	209	1,002	1,211	35	335
1919-20 . .	34,242	148	82	230	1,024	1,254	27	292
1920-21 .	35,955	126	67	193	948	1,141	32	412
1921-22 .	29,598	118	20	133	828	961	31	423
1922-23	32,176	123	15	138	912	1,050	31	381

STATEMENT No. CIV.

Note by the Tata Iron and Steel Company explaining certain mistakes in the published evidence.

If the Board will allow me to do so, I should like to make certain corrections on one or two minor points in the published evidence. I see that I have stated that the Second Preference Shares become cumulative from the expiry of five years. I do not know how I can have made that mistake, but I think there must have been some confusion between the new ordinary and deferred shares which did not rank for dividend on profits earned prior to 30th June 1921 though issued in August 1917, and the Second Preference Shares which, as the Balance Sheets will show, have ranked for dividend and have been cumulative from the payment of the application and allotment money, that is, from 1st March 1919. I also notice that, on page 93 of the record, my answer to Mr. Ginwala conveys the impression that my own salary is paid by the Steel Company. That of course is not correct. I am paid nothing by the Steel Company, but attend to its business as a Director of the Agents' Firm.

I would further wish to express my regret for the trouble that has been caused to the Board by the fact that the figures in Statement No. I are not correctly tabulated for the purpose for which the President has used them in his examination of Mr. Tutwiler on pages 54 and 55 of the printed record. We desire to put in corrected statement showing the production per head of direct labour as far as this can be done. There has been an alteration in the system of recording labour statistics and the results of the former years cannot be compared with the results of the later years, but this has been done specially for the years 1915-16 and 1921-22 and a separate statement gives this.

I also tender notes regarding certain points which have been raised before the Board in the course of their enquiry by other witnesses. These deal with—

1. The fair industrial rate of profit.
2. The price of rails as given by the principal railways.
3. The burden placed on agriculture by the proposed duty on steel.
4. The increased cost of building resulting from the duty and the probability that steel will be largely replaced by wood in construction to the disadvantage of the country.
5. The comparison between our costs and American costs.

1. The fair industrial rate of profit.

This is not a question of the greed or rapacity of shareholders. It is a question of the terms on which money (*i.e.*, capital) can be obtained for industry in this country. I stated in evidence that I considered 10 per cent. a fair rate, and that if depreciation was to be included I would increase that to 15 per cent. These are questions of fact not of opinion. Leaving all question of depreciation out of consideration, as depreciation is really cost and not profit, I place before the Board the following evidence as to the rate at which capital can actually be obtained to-day for industry in India. In the past year the firm of Tata Sons has obtained upon debentures for the Steel Company and for two Hydro-Electric Companies in Bombay the total sum of £4,750,000 from the London money market. So far as I know, no Indian Companies have ever in the past obtained such large sums from England. The conditions of the Steel Company are well-known to the Board. The conditions of the Hydro-Electric Companies referred to are that they are suppliers of light and power to the city of Bombay. They have a practical monopoly of such supplies and they have long contracts at fixed rates for the supply of power to the Mills and factories and railways and the tramway and electric lighting system of the City. They would therefore be regarded as a first class industrial security in any country in the world. Out of the total sums obtained from England, £1,000,000 may be excluded as this has been issued with the guarantee of the British Treasury under the Trades Facilities Act. The average rate of interest on the remainder to the three Companies, after making all allowances for discount, brokerage, etc., works out to 8·26 per cent. Debentures are mortgage securities, and, generally speaking, the lenders require that the assets of the Company should cover the amount borrowed three times and that the average profits should cover the interest three times. Ordinary share capital could not be obtained unless there was a fair prospect of a considerably higher rate of interest because of the greater risks attached.

2. *Price of Rails.*

We have seen the evidence of the Agents of the G. I. P. Railway and of the East Indian Railway as to the increase in railway rates that would result from the increased duty which we have proposed. We find some difficulty in following this evidence because the price stated is not the same. The Agent of the G. I. P. gives a price of Rs. 148-8-0 which, we understand, includes a duty of 10 per cent. The Agent of the East Indian Railway states that the annual requirements of his line are 23,000 tons and cost Rs. 39,90,000 which gives a price of Rs. 173. We can only say that if we could obtain this price for our whole output of rails we should not ask for protection on this material.

We do not think that the duty that we have proposed would yield this price. We expect English rails to be landed in India without duty at about Rs. 120 if the railmakers in England are forced to meet the duty. That would give with the duty a price of Rs. 170 for rails. We have already proposed to the G. I. P. Railway and the East Indian Railway that we should supply all their requirements for rails for next year at the English landed price *plus* any additional duty that they may have to pay. In reply they have told us that we will be invited to tender and that our tender will be considered by their Home Boards. Our rail mill is of the latest pattern and if we are given an opportunity of running it at anything like full capacity we have no doubts that we can greatly reduce the cost and price of rails to this country. Our Works costs are to-day the same as American costs. And we can supply the whole demand of India for rails. In these circumstances we cannot see that it is to the advantage of this country that its railways should depend on foreign supplies.

3. *The burden placed on the agriculturist by the increase of the duty.*

We have seen a great deal of evidence placed before the Board in the interests of the consumer and more especially the agriculturist, but most of the evidence is theoretical. We had expected that some attempt would have been made to show the actual cost of steel to the ordinary cultivator and what exactly the increase in the duty would mean to him. We have ourselves endeavoured to ascertain this though we are not in a position to make these enquiries outside the locality in which the Works are situated. The instances attached may however interest the Board. The figures have been collected by Mr. Sawday by personal enquiry. We are aware of course that the actual cost of steel used by a cultivator does not represent the whole of the burden and that the general increase of prices and freights have also to be taken into account. But this evidence will show that the use of steel by the agriculturist himself directly is very small.

Statistics regarding use of Steel by cultivators.

1. Jayram of Kudada Village, Singhbhum.
   Lives with his grown sons, 7 in family.
   Has 20 bighas of land.
   Has following steel implements in use.
   2 Ploughs, cost of steel taps, Re. 0-4-0 per plough, last 2 years.
   One cart, cost of tyres Re. 9-0-0 , lasts 7 years.

One Kodali, cost Re. 1-0-0, lasts 2 years.

Two hanswas, cost Re. 0-4-0 each, last 10 years.

Two axes, cost Re. 0-8-0, last 10 years.

Annual cost of steel—

	Rs.	A.	P.
Plough shares	0	4	0
Cart	1	4	0
Kodali	0	8	0
Hanswas	0	1	0
Axes	0	1	6
	2	2	6

This includes cost of manufacture, and cost of raw material is probably not much more than half say 1-8-0.

Difference between 10 per cent. and 23 per cent., *i.e.*, 33 per cent. is about Re. 0-6-0.

Family lives on their own rice and vegetables.

Sell some vegetables, Cash earnings 40 a year.

Buys only clothes (Re. 1-8-0 per person per 6 months), Salt Re. 0-5-0 per month and spends rest on ceremonies. Does not hire his cart out. Members of the family work very seldom as labourers.

They work about 6 months of the year. Could get more money by working during the slack season or by hiring out the cart at any time but see no reason for getting more.

2. Durga Charan Prodhan of Ulyan and 4 brothers.

Thirty-five in family.

Thirty bighas of land.

	Rs.	A.	P.		Rs.	A.	P.
10 plough shares at	0	2	0	life 2 years, Annual cost	0	10	0
10 Kodalis	0	8	0	life 1½ years, ,,	3	8	0
5 Carts, tyres cost	8	0	0	life 3 years, ,,	14	0	0
12 hanswas at	0	4	0	life 6 years, ,,	0	8	0
3 Axes	0	12	0	life 7 years, ,,	0	5	0
					18	15	0

Cost of raw material for steel about 12-0-0.

Extra cost of tariff 10 per cent.—33 per cent. Rs. 3-0-0.

Cash income about Rs. 800 a year. Sells lac, hires carts, wood business and small shop.

Spends Rs. 3-4-0 each per 6 months on clothes for each adult.

Total expenditure about Rs. 500 a year.

3. Manohar Mohato of Ulyan.

10 in family.

	Rs.	A.	P.		Rs.	A.	P.
3 plough shares at	0	2	0	life 2 years, Annual cost	0	3	0
2 carts tyres at	8	0	0	life 5 years, ,,	3	8	0
3 Hanswas at	0	4	0	life 6 years, ,,	0	2	0
2 Axes at	1	0	0	life 6 years, ,,	0	5	0
					4	2	0

Cost of raw material, say Rs. 2-8-0, extra cost of tariff Re. 0-10-0, sells lac, hires cart out. Cash income Rs. 200-0-0 per annum to Rs. 250-0-0 could get work during slack season but has enough.

All these tenants say that the costs of their steel implements went up and has come down.

In buying pieces of steel by the maund they used to pay Rs. 5-0-0 in pre-war days the price went up to Rs. 23-0-0 and is down to Rs. 12-0-0. The price of tyres went from Rs. 3-8-0 to Rs. 14-0-0 and is down to Rs. 7-0-0 or Rs. 8-0-0.

4. Replacement of Steel by wood in buildings owing to the increased cost resulting from duty.

We have seen evidence given before the Board that there is a prospect that the increased cost of steel resulting from the duty may lead to its replacement by wood in building.

We attach copies of two letters from Mr. G. Wittet, the well-known Bombay Architect, which will show that in large modern buildings the cost of the steel actually used forms a very small proportion of the total cost. Steel is used very little in ordinary dwelling houses in this country and its chief use is for these large modern buildings. In them wood cannot be substituted firstly because it would not however cheap be economical because it cannot carry the same span and secondly because it is essential that such buildings should be fire-proof and the owners would not be prepared to take the risk of using wood.

We also attach plans and estimates of typical structures which have been prepared by the Tata Construction Company and which show that at present prices even with the addition of 33 and $\frac{1}{3}$rd per cent. wood is considerably more expensive than steel either for a dwelling house or for a factory building.

Considering the great advantages of steel from the point of view of insurance there does not therefore seem to be much reason to suppose that wood at present prices will replace it as a result of the duty.

सत्यमेव जयते

THE TATA ENGINEERING CO., LTD., CONSULTING ENGINEERS, YORK BUILDINGS, BOMBAY.

5th October 1923.

DEAR SIR,

In reply to your letter No. G.-1096 of 4th October, I have taken out the actual cost of the steel at the new Medical College at Parel now under construction in relation to the total cost of the structure.

The steel in this case consists of heavy beams and girders supporting floors over wide spans, which could not be replaced by timber, and steel rods forming the reinforcement for the concrete floor slabs.

The total cost of the structure is Rs. 8,70,000 and the actual cost of steel about Rs. 52,000, that is the cost of the steel is $\frac{1}{17}$ of the structure or say 6 per cent.

I am obtaining particulars of the Bank building and will let you have them later.

Yours truly,

(SD.) G. WITTET.

THE TATA ENGINEERING CO., Ltd., CONSULTING ENGINEERS, YORK BUILDINGS, BOMBAY.

10th October 1923.

Dear Sir,

In the Tata Bank building, which is a reinforced concrete structure faced with cut stone, the cost of the steel bars unfabricated amounted to Rs. 1,19,000 against a total structural cost of Rs. 16,44,000 or say 7¼ per cent. This appears to be a fair percentage to apply to buildings of this class where some architectural treatment and a good finish are aimed at.

In the case of a general utility building or factory structure the proportion of steel costs would be higher as the treatment and finish would be less expensive. A building of the latter class of the same cubic capacity as the bank would probably cost about Rs. 10,50,000 which would bring the proportion of steel up to 11 per cent.

Yours truly,

(Sd.) G. Wittet.

STATEMENT No. CV.

Statement showing estimate of working capital after Greater Extensions are completed.

I.

The Working Capital on Operation account on 31st March 1923 may be taken as 237 lacs as abstracted from the Balance Sheet :—

	Rs. Lacs.	Rs. Lacs.
Stocks and Stores	217·04	..
Less—		
Greater Extensions	48·68	168·36
Book Debts	..	46·40
Advances (after deducting Greater Extensions, say)	33·18 —17·00	16·18
Cash	..	6·17
		237·11

सत्यमेव जयते

The average *per month* of saleable output for the three months ending March 1923 was—

Pig Iron Tons 11,536—	
January	11,746
February	9,762
March	13,103
Steel Tons 13,019—	
January	11,828
February	13,089
March	14,141

Taking 2 tons of Pig Iron equivalent to 1 ton of steel, we get a total tonnage of 18,787 per month.

The tonnage after Greater Extensions are in full operation will be 37,000 tons per month as follows:—

	Tons per annum.
Pig Iron	38,000
Steel	421,000

Total tonnage 421,000 *plus* 19,000 or 440,000 tons per annum or 36,666 or, say 37,000 per month, as Pig Iron production is under-estimated.

On the above basis, the Working Capital after Greater Extensions works out to 466 lacs:—

18,800 : 37,000 :: 237 : 466

Against the above figure of Rs. 466 lacs, we have estimated our Working Capital at the round and more conservative figure of Rs. 500 lacs, because many fluctuating factors like the rise in quantity and cost of production, including labour, in exchange, and facilities of transport which determine how much stock of raw material and finished product it is safe to carry are to be taken into account.

II.

We roughly estimate our Working Capital after the Extensions are completed as follows:—

	Lacs.	Lacs.	
Spare Rolls		50	
Spare Ingot Moulds, etc.		10	
Stores (electrical and main, etc.)		70	
Operation spares and loose tools		50	
Bricks		30	
Raw materials—			
Coal	20		
Iron and Mn. Ore	10		
Limestone	5		
Sulphur, Scrap and others	10		
		45	
Colliery stores, stocks, outstandings		35	
Outstandings (Jamshedpur)		80	
Stocks of finished products		110	(We estimate one month's finished products will have cost us 55·5 lacs.)
		480	

For purposes of comparison, we give below a similar statement of our existing Working Capital:—

	Lacs.
Spare Rolls	13
Spare Ingot Moulds, etc.	2
Stores	35
Operation Spares and loose tools	4
Bricks	26
Coal	9
Iron and Manganese Ore	11
Dolomite and Limestone	3
Sulphur, Scrap, etc.	5
Collieries Stock and Stores, outstandings	25
Outstandings (Jamshedpur)	36
Stocks	56

सत्यमेव जयते

Annexure to Statement Regarding Working Capital.

		Lacs.	
1. Spare Rolls		50	
2. Spare Ingot Moulds, etc.		10	
3. Stores (elctrical and main, etc).		70	
4. Operation spares and loose tools		50	
5. Bricks		30	
Raw Materials.	Lacs.		
6. Coal	20		
7. Iron and Mng. Ore	10		
8. Limestone	5		
9. Sulphur, Scrap and others	10		
		45	
10. Outstandings (Jamshedpur)		80	
11. Stocks of finished products		110	(We estimate one month's finished products will have cost us 55·5 lacs.)
		445	

1. We scrap very few rolls, but we must have all shapes and this is the irreducible minimum.

2. We expect to make and scrap every year about 10 lakhs worth of moulds, etc.

3. Represents six months' consumption and includes in this some spare electrical equipment. The stores include oils, hardware, and all sundries, also Electrical equipment of all kinds.

4. Some of the spares have been received with Greater Extensions plant and are essential here, as we cannot expect to make them here.

5. These consist of a vast variety of shapes. Some of the rare shapes are for a year or more in stock but regular bricks will be about 3 months in stock. We have to face, however, some heavy stocks of regulars as these had to be taken in a certain proportion with special shapes required for the Coke Ovens, etc.

6. This is less than two months' consumption.

7. Three months' consumption.

8. Three months' consumption.

9. Six months' stock of sulphur and balance is about three months' consumption.

10. 45 days' sales.

11. A little over two months' output.

STATEMENT No. CVI.

Statement by the Tata Iron and Steel Company regarding main items of excess spread between Pig Iron and Ingots in Jamshedpur from January to May 1923 over those in United States of America 1st quarter 1923.

One tonnage.

Tonnage in United States of America from furnaces of equal hearth areas will be about 20 to 25 per cent. greater than those at Jamshedpur.

The main reasons for the low tonnage at Jamshedpur are :—

1st Climatic conditions.

2nd Quality of steel made.

Climatic Conditions.

Climatic conditions in India are not as conducive to the manufacture of steel on account of the temperature in which the Furnacemen have to work being much higher than in the United States of America.

In order to make quick heats and consequently produce large tonnage, the Furnaceman must be in front of his furnace, watching what is going on inside much more than it is possible to do when working in such a high temperature. In England no furnace fronts are water-cooled because it is neither necessary nor economical, whereas in United States of America where the weather in the summer months is much warmer than at any time in England, it was necessary to water-cool the furnace fronts in order to get the men to watch the furnace as closely as possible to produce quick heats without damaging the furnaces and yet produce large tonnage. When a Furnaceman cannot stand in front of his furnace and watch what is going on inside as he should do, there are many things that occur which greatly affect the tonnage and reduce the life of the furnace.

It is only common sense that a human being can do more and better work in a cold climate working around a furnace which has an internal temperature well over 3,000° Fahrenheit and is radiating heat which is felt yards away, than he can working around the same kind of furnace in a hot climate similar to that of India.

The point I desire to bring out is that a cool atmosphere in which the Furnacemen work is necessary in America for high production and that climatic condition of India undoubtedly is a big factor in retarding the rapid production of steel in the Open Hearth furnaces. This is clearly shown in our own plant by the difference in production during the hot and cold weather ; *vide* chart attached.

Quality of Steel.

At Jamshedpur we must make a better grade of steel than is made at the American Plants whose costs are being compared with those at Jamshedpur. Our output is nearly all rail steel and British Standard mild. If we have casts that cannot be applied on these two grades they must be returned to the furnaces and remelted. This is not true in the American Plants ; they have a more variegated line of product and can use casts which we would have to remelt. This condition will disappear to a great extent when our newplant comes into full operation and with its disappearance our costs will come down. On account of this we must be more careful to ensure that when it is tapped it will come within the specification. This necessitates more care and time which naturally reduces the output and reduces the tonnage life of furnace. In the plants from which I secured my cost figures on my recent visit to the States I saw steel being rolled that we could not sell but would have to be returned to Open Hearth to be remelted.

Steel cannot be made anywhere at the rate it is in the United States of America and at the same time of the quality that is demanded of Tata Iron and Steel Company and which it is to their best interest to make much less can it be made in India of the quality demanded. Quantity can be obtained but at the expense of quality.

If the tonnage at Jamshedpur were 20 to 25 per cent higher, our conversion cost and consequently the spread between Pig Iron and Ingots would be reduced by about Rs. 8 to Rs. 10. We would have lower fuel and labour costs per ton of ingots, fewer repairs to the furnaces, fixed and other charges per ton of output would be less and our spread between pig iron and ingots would be very near that in the United States of America.

We have, however, other disadvantages which would prevent us reaching their figure such as the cost of our bricks, stores, materials, etc. The cost of bricks, represents 80 per cent of the cost of rebuilding the furnaces and as we have to pay a higher price than in United States of America our costs for this item will naturally be higher. They would however be lower with higher output. Our coal, fluxes, refractories and some other minor items are not as good as at the average American Plant, but these disadvantages are small as compared with the disadvantages resulting from the location of the industry and quality of steel made.

On account of the covenanted hands our labour costs in the Open Hearth are higher than in United States of America.

One would naturally ask if these handicaps will continue to exist and consequently no increase in production or decrease in costs can be expected.

The climatic condition and its effect will continue.

Many conditions existing at present will be changed and improvement in tonnage can be expected. Manufacturing costs should come down providing labour raw materials, stores, etc., do not materially increase.

Reasons why tonnage should increase and costs decrease :—

(1) We are building a new Calcining Plant in which our refractories will be calcined which should not only result in lower consumption but less bottom trouble, consequently higher tonnage.

(2) From the steel production of the new plant we will receive more scrap for the Open Hearth Furnaces and can decrease the iron charge which will require less flux resulting in a lower slag volume and consequently increased tonnage.

(3) Labour will gradually be reduced as we are training Indians to take the place of Europeans.

(4) We will have a more varied line of product into which we can put more of our off-grade steel which will not have to be remelted. This will result in increased tonnage.

Statement showing cost of Manufacture and selling price in United States of America.

सत्यमेव जयते

	Cost of Manufacture.	Selling Price.
Year 1909-13—		
	$	$
Basic Pig Iron	13·00	14·39 Valley Base.
Billets	19·00	(*) 23·92 Pgh. Base.
Rails	22·50	28·00 „ „
Bars	26·00	(*) 31·14 „ „
First Quarter 1923—		
Basic Pig Iron	24·00	27·17 Valley Base.
Billets	35·00	(*) 40·00 Pgh. Base.
Rails	41·00	43·00 „ „
Bars	45·00	(*) 49·06 „ „

---

* Base prices—extras secured for size, analyses, etc., which would amount to 2 to 3 Dollars.

Statement showing approximate works costs pre-war in United States of America, years 1915-16, 1917 Jamshedpur and first quarter 1923 United States of America, Canada, and February to May 1923, Jamshedpur.

Rs. 3 = $ 1·00		Pre-war United States of America.	1915-17 Jamshedpur.	United States of America 1923.	Canada 1923.	Jamshedpur 1923.
Pig Iron	Rs.	39 0 0	20 0 0	72 0 0	69 0 0	36 13 0
	$	13·00	..	24·00	23·00	..
Spread	Rs.	12 0 0	22 0 0	18 0 0	5 8 0	33 7 0
Ingot	Rs.	51 0 0	42 0 0	90 0 0	74 8 0	70 4 0
	$	17·00	..	30·00	24·75	..
Spread	Rs.	6 0 0	10 0 0	15 0 0	14 0 0	17 15 0
Blooms	Rs.	57 0 0	52 0 0	105 0 0	88 8 0	88 3 0
	$	19·00	..	35·00	29·50	..
Spread (*a*)	Rs.	10 8 0	26 0 0	18 0 0	..	34 13 0
		..	20 0 0	..	..	24 13 0
Rails*	Rs.	67 8 0	78 0 0	123 0 0	..	123 0 0
	$	22·50	72 0 0	41·00	..	113 0 0
Spread	Rs.	21 0 0	33 0 0	30 0 0	28 8 0	46 12 0
Bars	Rs.	78 0 0	85 0 0	135 0 0	117 0 0	134 15 0
	$	26·00	..	45·00	39·00	..

(*a*) Spread, with 2nd class rails taken in as product, as is done in United States of America.

* Cost of rails with 2nd class rails taken in as product, as is done in United States of America.

Comparison of costs United States of America and Canada first quarter, 1923, with Jamshedpur, February to May, 1923.

Rs. 3 = $ 1,00.	Canada.		United States of America.		Jamshedpur.	
	$	Rs. A. P.	$	Rs. A. P.	$	Rs. A. P.
Pig Iron—						
Materials per ton of iron	21·00	63 0 0	..	..	9·54	28 10 0
Cost above	3·70	11 2 0	..	..	2·73	8 3 0
Total	24·70	74 2 0	24·00	72 0 0	12·27	36 13 0
Labour	·85	2 9 0	1·00	3 0 0	·89	2 11 0
Ingots—						
Pig Iron	23·00	69 0 0	23·00	69 0 0	12·27	36 13 0
Scrap	13·00	39 0 0	20·00	60 0 0	7·63	22 14 0
Mixture	16·75	50 4 0	22·00	66 0 0	11·23	33 11 0
„ per ton of Ingots	19·00	57 0 0	24·50	73 8 0	13·00	39 0 0
Conversion	8·00	24 0 0	8·00	24 0 0	12·19	36 9 0
Cost above	5·75	17 8 0	5·50	16 8 0	10·42	31 4 0
Total	24·75	74 8 0	30·00	90 0 0	23·42	70 4 0
Labour	1·10	3 5 0	1·50	4 8 0	1·92	5 12 0

Rs. 3—$ 1,00.	Canada.				United States of America.				Jamshedpur.			
	$	Rs.	A.	P.	$	Rs.	A.	P.	$	Rs.	A.	P.
Blooms—												
Ingots	25·00	75	0	0	30·00	90	0	0	28·42	70	4	0
Conversion	4·50	13	8	0	5·00	15	0	0	5·33	16	0	0
Total	29·50	88	8	0	35·00	105	0	0	29·40	88	3	0
Labour	·65	1	15	0	1·50	4	8	0	·56	1	11	0
Rails—												
Blooms	..	..			35·00	105	0	0	29·40	88	3	0
Conversion	..	..			6·00	18	0	0	11·65	35	15	0
Total	..	..			41·00	123	0	0	41·00	123	0	0
Bars—												
Billets	29·50	88	8	0	35·00	105	0	0	29·40	88	3	0
Conversion	9·50	28	8	0	10·00	30	0	0	15·58	46	12	0
Total	39·00	117	0	0	45·00	135	0	0	44·98	134	15	0
Labour	4·50	13	8	0	..	..			3·98	11	15	0

NOTE.—Cost of Pig Iron at the Blast Furnace does not agree with the price charged to Ingots in United States of America and Canada as they use an average price when charging to the open Hearth Furnaces.

STATEMENT No. CVII.

Statement showing the value in Dollars year by year of the orders placed in America for the Greater Extensions.

सत्यमेव जयते

	$
1917	4,623,148
1918	2,040,266
1919	3,318,948
1920	7,054,467
1921	2,922,755
1922	997,322
1923	350,461
TOTAL	21,307,367

In 1917 the Steel Company placed orders for the steel work of the "C" and "D" Furnaces, purchased the Batelle Furnace, placed orders for parts of the Coke plant, machinery for No. 2 Machine Shop, the original orders for all of the Rolling Mills, Blast Furnace Blowers and Condensers, 25 Wickes Boilers, one 200-ton Tilting Furnace, as well as for miscellaneous Motors for the various parts of machinery in the plant, cables, etc.

In 1918 the Steel Company ordered the majority of the cranes from the Alliance Machine Company, more tools for No. 2 Machine Shop, Switchboard for the Power House, parts of the Blooming Mill, one Blower, Skip Hoist for "C" and "D" Furnaces, 2nd stand for the Plate Mill and some switching Locomotives.

In 1919 the Company ordered further parts for the Blooming Mill, Cables Electrical Supplies, Ingot Cars for the Open Hearth, spare parts for Mills, two 10,000 K. W. Generators and Condensers, parts for Blast Furnace, Plate Mill, etc.

In 1920, which was the heaviest year, orders were placed for Cables, Electrical Supplies, McClintic Marshall's contract was placed. (This contract covered 54,679,550 lbs. of structural steel at 6,902 cents per lb. = Total $3,772,986. We had originally intended to roll most of this ourselves, but at that time we could get higher prices for our own steel) orders for Pouring Crane for Open Hearth, parts for Sheet Mill, Blooming Mill, Merchant Mill and considerable quantity of material for railroad cars.

In 1921 orders were placed for Cables, Electrical Supplies, Transfer Ladle Crane for Open Hearth, Corrugated Sheeting, and Blooming Mill Parts.

In 1922, Calcining Plant, Equipment for Open Hearth, Blooming Mill parts, 2nd Bessemer Blower, and Rolls for various Mills.

In 1923 Cables and Electrical Supplies, Gas Producers for the Open Hearth, Switchboard for No. 3 Sub-station and miscellaneous equipment.

सत्यमेव जयते

Part B—Oral.

सत्यमेव जयते

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., representing The Tata Iron & Steel Co., Ltd., recorded at Jamshedpur on the 17th August 1923.

President.—Mr. Peterson, I understand that you have been authorised by the Tata Iron & Steel Co. to give evidence on their behalf in connection with the enquiries of the Tariff Board. I gather also that if we should touch on technical points you may prefer that Mr. Tutwiler should give evidence on behalf of the Company. The arrangement will be that if in course of to-day's examination we come upon any technical points that you prefer not to deal with yourself, they will be postponed to some subsequent meeting.

I propose to begin the evidence on the question of the conditions justifying protection. As you know the resolution of the Government of India appointing the Board expressed general approval (in accordance with the resolution passed by the Legislative Assembly) of the principle of discriminating protection laid down by the Fiscal Commission. One of the proposals of the Fiscal Commission was that, where an industry was essential for purposes of national security, protection when required ought to be given irrespective of the conditions laid down by the Commission for ordinary cases. We understand that the case for the Tata Iron & Steel Co. is that the steel industry is an industry of that kind. Is that correct?

Mr. Peterson.—Yes. We have stated it in our letter to the Government of India.

President.—We only want to clear the ground and to make sure that we have correctly understood the Company's case. Am I right in saying that you consider that all the conditions laid down by the Fiscal Commission as justifying the grant of protection in ordinary cases are satisfied in this case?

Mr. Peterson.—I think we have mentioned all that in our letter.

President.—The first condition (paragraph 97 of the Fiscal Commission's report) is that the industry must be one possessing natural advantages, such as an abundant supply of raw material, cheap power, a sufficient supply of labour or a large home market. These are examples of natural advantages. The Company claim, I understand, that the natural advantages of the steel industry in Jamshedpur satisfy these conditions. I think you have dealt with that specially in your letter to the Government of India.

Mr. Peterson.—Yes. We have, in paragraph 4 of that letter.

President.—You say there that the necessary raw materials exist in India in enormous quantities. To begin with I take it that it refers primarily to iron ore.

Mr. Peterson.—And coal.

President.—Could you very briefly indicate the advantages you possess in the matter of iron ore?

Mr. Peterson.—In our opinion the iron ore in India that we ourselves hold will be sufficient to keep our plant going at its present capacity for at least 300 years. And we believe that what we hold is only a fraction of the enormous reserves of ore in India.

President.—Is this iron ore found in the vicinity of Jamshedpur?

Mr. Peterson.—At about a distance of 40 miles from here.

President.—Within what maximum range?

Mr. Peterson.—I think the best way to explain the quantities and situation of our reserves of raw materials will be to supply you with a map* showing the actual distances of our ore, coal and flux supplies from our works and our estimate of the reserves held by us in those areas.

President.—We shall be very grateful if the Company will supply us with the information that you suggest.

Then as regards coal. There is one point in connection with coal that I would like especially to get the opinion of the Company about. The Industrial Commission, in Chapter VI of their report, remarked that for metallurgical purposes the supplies of suitable coal are greatly restricted. It mentions certain minor coal fields and then goes on "the only large supply of good coking coal so far established, and within an area suitable for industrial development on modern lines, is that of the Gondwana fields of Bengal and Bihar. Even in these Gondwana coking coals, the high percentage of ash and low calorific value reduce their radius of economic use under conditions of railway transport, and it will be still further diminished as the shallow seams are exhausted and the deeper coal is worked at higher cost." That passage appears to indicate some doubt in the minds of the Industrial Commission as to the sufficiency of the supply of good coking coal. I should like to know what your view is as regards the position in that matter.

Mr. Peterson.—Do you mean for the Company itself or for India as a whole?

President.—Primarily for the Company itself at the rate contemplated but also for India as a whole assuming that the Indian consumption of iron and steel will eventually be provided within the country.

Mr. Peterson.—That will be a very difficult question to answer. I could give you the approximate figures for the Company. For the whole of India you can get them from the Geological Survey Department. There was a commission at one time on the question of conserving metallurgical coking coal especially for metallurgical industries. They have examined the question very carefully.

President.—My question arises from the statement made by the Company that the necessary raw materials exist in India in enormous quantities.

Mr. Peterson.—They do as far as we are concerned. But if you ask for the whole of India, that will be a very difficult question to answer. If you take the present consumption of our plant when the extensions are completed at 1 million to 1¼ million tons and estimate on that consumption we ourselves have coking coal sufficient for 300 years, and that is coal which has been proved. We do not know what may lie beneath but there may be very much larger quantities.

President.—After all, it is your own case. I think you have indicated this in your letter.

Mr. Peterson.—I think the passage quoted from the Industrial Commission's report refers to this point.

President.—Is not that one of the factors that justify the grant of protection, namely, that it will so stimulate the steel industry within a comparatively short time that India will be able to supply its own needs.

Mr. Peterson.—Of course steel manufacture requires enormous quantities of coal. It cannot be definitely said what quantities of coal exist in India. We know there are very large quantities close to the iron ores. Much of the coal is classed as non-coking but may eventually turn out to be coking. It is a question of cleaning it. There are also large areas quite close to us here almost as close as the existing coal mines, in which we know definitely of the existence of large quantities of coal. We are at present prospecting for it. There are the Bokara and Karanpura fields and we are ourselves prospecting in certain States and have applied for a mining lease over a large area in the Central Provinces. Any of these fields may be larger than the existing coal fields and may contain larger quantities of coking coal. These coal beds extend right across India from Jheria to beyond Korea and large areas have been taken up there by the Railways and by other people. It is impossible to estimate what the effect of these investigations will be and what quantities of coking coal will be found. I suggest that if the Tariff Board wish information on this point the best source would be the Geological Survey of India.

---

* Not printed.

President.—The Tariff Board will utilise any source of information that they have access to.

Mr. Peterson.—I doubt very much if the Company is in a position to give an estimate of the available reserves of coking coal in India. We know they are very large but we could give nothing resembling an accurate figure. I think we can only give figures for our Company with any certainty.

Mr. Ginwala.—We might have those figures at least.

President.—If you have no objection we shall be glad to have them.

Mr. Peterson.—I think the figure was actually given in our prospectus which was actually checked by Sir Thomas Holland.

President.—I felt it necessary to put that point to you in the examination to-day in order just to clear up that question and find out what your view was as to the adequacy of the supply of coking coal which I take it is indispensable to the existence of the iron and steel industry.

Mr. Peterson.—There are large quantities of coking coal, and a great deal of other coal which could be coked but which cannot at present be used in the manufacture of iron and steel owing to the high cost of cleaning it. Extensive experiments have been carried out both in this country and in England for removing the ash from the inferior coal by washing or mechanical separation. Interesting experiments in low temperature carbonization are being carried out by Mr. Henry Ford at present in America. If the process is successful it may alter the whole position as to the use of inferior coal in India.

President.—We are much obliged to you for what you have told us.

Then the second condition laid down by the Fiscal Commission is that the industry must be one which without the help of protection either is not likely to develop at all or is not likely to develop so rapidly as is desirable in the interests of the country. Your case is that the steel industry satisfies that condition.

Mr. Peterson.—Yes. But I do not think we put the case exactly in that way.

President.—I understood that was the purport of your case, and that the statement you have put in about your case said that that condition was satisfied.

Mr. Peterson.—Can you refer me to any statement of that kind that we have put in?

President.—I understood from the evidence which you gave before the Fiscal Commission that there was a danger that the manufacture of steel might cease altogether.

Mr. Peterson.—You are perfectly correct. The present position is in our opinion this: that unless protection is afforded to this industry, which ought to have been afforded two years ago, there is every probability that the steel industry in India will cease and I do not think it will be undertaken by anyone else for a period of at least 20 years.

President.—That seems to me precisely the reason for the statement that the condition laid down by the Fiscal Commission was satisfied. The third condition laid down by the Fiscal Commission is that the industry must be one which will eventually be able to face competition without protection.

I understand that it is your opinion that that condition is also satisfied.

Mr. Peterson.—We think so.

President.—The Fiscal Commission also say in paragraph 98 "it is evident that an industry in which the advantages of large scale production can be achieved, *i.e.*, in which increasing output would mean increasing economy of production, is, other things being equal, a particularly favourable subject for protection. Do you consider that applies to this industry?

Mr. Peterson.—That applies more peculiarly to the steel industry than to any other industry.

President.—Finally there is one more point they mention. Another class of industry which should be regarded with a favourable eye is that in which there is a probability that in course of time the whole needs of the country could be supplied by the home production.

Mr. Peterson.—I think that is certain.

President.—You state very clearly the reason why at the present moment the industry finds it very difficult to carry on without protection. The first point I would like to clear up is how far you regard difficulties as likely to continue for a long time and how far as evanescent.

Mr. Peterson.- I do not think that is a point on which a definite opinion can be given. I take it that you are referring to the depreciation of exchanges.

President.--First of all there is the difficulty that it will take a number of years before you get Indian labour thoroughly trained. That I take it would probably cover at least a period of 25 years.

Mr. Peterson.—We do not think so long. There will always be a certain number of experts employed but their number is gradually growing smaller and smaller.

President.—After what period do you anticipate that the extra expenditure you have to incur on foreign skilled labour will practically disappear?

Mr. Peterson.—We think the practical disadvantages in cost will disappear in about 15 years.

President.—I think in your evidence before the Fiscal Cimmission you point out that the present difficulties largely arise from the fact that during the war the world's capacity to manufacture steel had been greatly increased while as a result of the war the world's capacity for purchasing it has been decreased. Have conditions continued like that all the time and how long will they continue?

Mr. Peterson.—The market is in a constantly fluctuating condition at present and it is impossible to foresee what effect political conditions will have on it or what those conditions will be. That statement was made two years ago, before the occupation of Ruhr and it is impossible to say what the outcome of that occupation will be. All we can say is that before we get back to normal conditions, when production throughout the world approximates to the demand, the capacity for production will take a long time to adjust itself to the demand. In America at present the steel works are running at full capacity. In England I do not know what the actual output is. Probably it is under 60 per cent. In the Ruhr in Germany the output I should think is practically *nil*. The demand for steel in Russia and Eastern Europe has probably ceased altogether. Without a complete survey of future political conditions which we are not in a position to make and on which our opinion would be valueless, I do not see how that question can be answered.

President.—I take it that the company look forward to a period characterised by depressed prices owing to the fact that production is likely to get ahead of consumption.

Mr. Peterson.—In England and in Germany, and similarly in America, the steel works have been working below their capacity for the last three or four years, *i.e.*, since 1918 or 1919. But we also know that the large markets in the world have ceased to buy, *i.e.*, Germany, the whole of Eastern Europe and Russia.

President.—What I want to get at is this: I understand the Company look forward to a comparatively long period during which prices will be inclined to the low side and the competition for available markets will be intense. In addition to that you mention amongst the reasons which render protection necessary the question of dumping, *i.e.*, that the European producing countries have been selling steel in India below the prices at which they sell in the country of origin and even below the cost of production.

Mr. Peterson.—We believe that.

President.—You have given us certain quotations from newspaper articles on the subject—not exclusively newspaper articles but in the main the documents you have submitted to us are extracts from newspapers. Can you suggest any way in which the Board can verify these?

Mr. Peterson.—Certain of these extracts are from confidential reports which are generally obtained from a dealer in iron or steel in England. What value is to be attached to these reports is a matter for the Board. With regard to prices we can show you the actual quotations in the newspapers and actual invoices of copies of them from firms who import the material but these are not certified copies and perhaps not signed. On the question of steel rails you can probably obtain from the Railway Board actual quotations at which steel was imported into this country during the last few years. We can show you actual invoices from manufacturers. Our prices in this country are fixed on the English prices. With certain of the Engineering firms and dealers who take supplies from us we fix our prices quarterly and these are based on the actual English price for export. We write to them and say that our information from England is so and so: they say in reply that they have actual quotations for import giving a lower price. Frequently they send us copies of the invoices and our price is fixed on them. We cannot suggest any other method by which we can prove the correctness of the statement made in newspapers. That must be taken as the statement of the paper itself and the paper being a recognised trade paper in England or America, as the case may be, it is a question for the Board to decide what weight is to be attached to the statements. I may say that the prices quoted in these newspapers are accepted by the companies and other persons who purchase from us as final and as conclusive evidence of the price of steel in England and America as the case may be. Many of our large sales are made on this basis.

President.—In your opinion the statement made in the English trade journals as to the export price being lower than ordinary trade prices in the country can be accepted? That is to say you would accept them for the purpose of bargains?

Mr. Peterson.—Yes. We often do.

President.—Coming now to the second point that the export price is below the cost of production I take it that the newspapers can only express an opinion.

Mr. Peterson.—The best evidence that we have submitted on that point is the statement of directors and presidents of companies actually manufacturing. We cannot give you the reports of these companies, we can only give you statements from newspapers. But there are cases in which the President of a Company has made definite statements in public that they are selling at a loss.

President.—The next question that arises is assuming tnat, European manufacturers, have been selling below the cost of production, do the Tata Iron and Steel Company consider that this state of affairs can go on indefinitely?

Mr. Peterson.—I don't think it can go on indefinitely.

President.—I think it has already been going for the last two years.

Mr. Peterson.—Intensive dumping from England has been going on for the last 15 months. I am leaving out of account the depreciation of exchanges. England has to meet continental competition that is due to many factors which can hardly be described as ordinary. There is the depreciation of exchanges. We do not know how much of the raw materials are obtained from Germany and paid for in a depreciated currency. We do not know how much of that goes to England as unfinished steel to be finished in that country. There are bounties; there are freight rates specially reduced for exports. We cannot prove these 'but we know that steel is coming to this country from the Continent at an extremely low price—a price much less than the price which prevails in England itself.

President.—Do the Company consider that the British manufacturer can continue to sell below the cost of production for a long period?

Mr. Peterson.—Taking England as a whole they can do so for a very considerable period for the Indian market.

President.—The question I will put to you is what is to prevent the foreign manufacturer from getting into the English market?

Mr. Peterson.—He does.

President.—Would not the difference between the export and English price thus disappear? I take it that the English manufacturer must meet his cost of production somewhere.

Mr. Peterson.—I don't think they can do that because they cannot supply the demand. The only country that could do that would be America. The conditions of the Continent are so disturbed that I doubt very much if the foreign manufacturer could compete very much in England.

President.—After all the Belgian manufacturer is sending steel to India at a price which is lower than what he could obtain in England for the same steel.

Mr. Peterson.—Whether he could or could not have obtained the same price for the same quality in England it would not be to his interest to do so. If he could obtain a higher price in England and a lower price in this country, it would still be to his advantage to keep up prices in England and to send the surplus of his production to this country.

President.—The individual manufacturer would naturally send his product to the market where he could obtain the best price.

Mr. Peterson.—Yes; but it might be very much against his interest to reduce the price in any given country. In England the price for home consumption is £10 a ton and the price in India has been as low as £8 a ton.

President.—The English manufacturer will no doubt do his best to keep up the English price. But why should the manufacturer in Belgium wish to keep up his English price? If he sent a considerable quantity to England would not that tend to reduce the English price?

Mr. Peterson.—I doubt if he can send enough steel to England to reduce the price. Naturally he would not wish to do so if he could obtain the higher price. The consumption of India is very small compared to the large producing countries.

President.—I take it that the opinion of the Tata Company is that it is quite possible that either the British or the continental manufacturer might for a prolonged period continue to sell steel in India below their cost of production.

Mr. Peterson.—Yes. It depends on the way in which they are able to dispose of their surplus products. There is a very good instance given in one of our confidential reports on page 33 of our representation: "The South African Government placed an order for 3,000 tons of 45 lb. per yard rails and the figure they paid was £7-12-3 per ton f.o.b. Liverpool. Now those rails came from Workington from a mill belonging to the United Steel Works Ltd., and you can take it that the cost of delivering from the Works to f.o.b. Liverpool would not be less than 12*s.* 3*d.*, thus leaving a nett figure at the Works of £7 per ton, which beyond any question whatever is well below the actual cost, but on the other hand the same Works have been recently engaged in rolling several thousand tons of heavy rails for an English Railway, and I have every reason to say that they got £9 per ton for this particular lot for the home trade, so taking the two lots together (the contracts were both fixed up at about the same time) the suppliers probably came out with an average price at the Works of £8-5-0, on which they no doubt felt justified in starting up their mill again, as they had previously been idle for several months." It paid him to put in the necessary rolls and to start his works on the two orders. The order at the higher price would not have paid by itself.

President.—Then, taking the question of depreciated exchange, do the Company take the view that the effect of depreciated exchange in assisting the exports of a country continues indefinitely if the exchange after having fallen ceases to fall?

Mr. Peterson.—Is that a hypothetical question?

President.—We know that during the last year the Belgian exchange has been falling from one point to another and it is obvious in a case of that kind if the fall continues pretty steadily, the exporter in that country has an advantage. The question I wanted to put was whether if the exchange falls and remains steady at a lower point, you consider the advantage the exporter has continues for a long time? The question has been keenly debated in this country before. I want your opinion.

Mr. Peterson.—In fact he would have considerable advantages for some time.

President.—I take it that you do take the view that when the exchange is falling, that is to say Belgian franc is becoming less and less valuable, that for the time being benefits the Belgian exporter, but you do not take the further view that if the fall ceases the advantage is retained.

Mr. Peterson.—I think it would be retained for some time. It is probable that the recovery in prices in the country would not take place simultaneously with the stabilization of exchange at a low rate. Wages for instance would remain below the real wages for a considerable period, but it is very difficult to estimate. The manufacturer in such a country would probably pay his labour less, he would probably pay less freight in terms of real money. For a considerable period he would have a bigger margin. When inflation on a great scale occurs real prices do not rise so quickly as nominal prices.

President.—I want to turn now to the question of the amount of protection which in the opinion of the Company is necessary. You put that figure at 33⅓ per cent. Are you prepared to tell the Board on what basis you arrived at that figure as being a suitable amount?

Mr. Peterson.—We think that is sufficient and that is the minimum that is sufficient.

President.—That I quite understand. But for the purpose of the Board, when they come to make their recommendations, they will have to give some justification for their proposals. What I wanted to find out from you was whether you are prepared to inform the Board as to the basis on which you arrived at that figure?

Mr. Peterson.—I think roughly speaking it was based on a calculation very much as follows. Taking the English base price landed in this country without any duty at £10, *i.e.*, Rs. 150 c.i.f. a protection of one-third would give us a price in this country of Rs. 200 a ton. We consider we should be able under any conditions to manufacture at that price for a considerable time.

President.—I see what you are aiming at is Rs. 200 a ton for steel rails?

You consider that you ought to be able to obtain the price of Rs. 200 a ton.

Mr. Peterson.—Considering all the circumstances we should be able to manufacture at or under that price.

President.—Assuming that that is what you regard as reasonable, does not that imply that in future steel will not be imported into India at less than Rs. 150? Because if it were you would not get that price.

Mr. Peterson.—Prices do not remain steady. For the first 5 years we shall expect the price to fluctuate. It might go down or it might go up. We do not think it is likely to go up, and in order to secure ourselves against fluctuations of that kind we have taken that figure. It is quite possible that the English price of steel might go down to £8 or less: it might happen for 18 months or longer out of a period of 5 years. We have estimated the costs for a period of 5 years and we consider that at that rate we should be able to defy competition. It is impossible to see further ahead and after that period it may be necessary to increase or to reduce this duty. In certain periods we might be making smaller profits but spread over a long time we think this amount of protection would enable us to face competition. That suggestion of 33⅓ per cent. was made, in fact, two years ago when we first drew the attention of Government to the fact that steel was being imported into this country at the low price of Rs. 120 a ton. It has since gone lower.

President.—Do you consider from the point of view of the Tariff Board that 33⅓ per cent. will do all that is necessary?

Mr. Peterson.—Yes, but exchange plays a very important part in this question. Any protection afforded in some way or other should be devised on a sliding scale in accordance with the rise and fall of the exchange, because any rise in exchange to say 2*s.* would at once make any question of manufacture in this country impossible.

President.—That rather leads us away for the moment from the matter we have been considering, but we shall take up the question later on.

I gather that 33⅓ per cent. you regard as on the whole adequate to protect you against the ordinary rise and fall of prices. But in addition you consider that if owing to special circumstances dumping starts on an extravagant scale, *e.g.*, owing to a collapse of exchange in the exporting country, Government ought to have power to deal with that specially?

Mr. Peterson.—I would prefer imposing a higher rate of duty from the start rather than to deal with it when an emergency arises. It is our experience that when an emergency arises it is extraordinarily difficult to get any authority to take any action.

President.—Once special legislation has been passed to deal with such emergency we might at least hope that the delay would be less.

Mr. Peterson.—To-day there is special legislation against dumping, which might well have been applied to steel. No action was taken by Government.

Mr. Ginwala.—In the case of sugar action was taken.

President.—Would you tell the Board exactly what you propose?

Mr. Peterson.—We have suggested 33⅓ per cent. in the case of countries where the exchange is normal and in the case of countries where the exchange is depreciated that the duty should be increased from the start or that a sliding scale should be introduced whereby a certain proportion of the depreciation of exchange is compensated in the form of customs duty. I think that in Canada they take half the value of the imported article from a country with a depreciated currency and value at original normal exchange on the balance. I think in Australia and America they have been doing the same thing.

President.—I don't think you have stated quite clearly what your proposal is.

Mr. Peterson.—It is in the last representation.

President.—I do not propose to deal with that representation now. We might postpone it till another day. I should like to refer for a moment to this question of bounty. The bounty that you specifically mention is the reduction of freight rates on raw materials imported into Belgium. It amounts to 30 francs a ton. That would be Rs. 4 a ton at the present rate of exchange. It may have been as high as Rs. 8 a ton at the time it was first given. Have you reason to believe that there are other similar indirect bounties.

Mr. Peterson.—We think so but it is extremely difficult to prove them.

President.—You suspect their existence but you are not in a position to produce any concrete instances to which you wish to draw the attention of the Board.

I do not expect that you will be able to give us the information we want to-day on another aspect of the question. You will perhaps have to consider it and let us have the information later on. That is to say the specific steel products which you consider ought to be accorded protection.

Mr. Peterson.—I think I can give it to you now.

President.—It would I think perhaps make it a little easier for us if you would put that in writing so that we may have an opportunity of considering it before we question you on that. You were good enough to give us a statement of the articles you manufacture at present and expect to manufacture by the end of 1925. The object which the Board had in view in asking for that statement was to ascertain what articles you thought ought to be protected. But it would be desirable to have that more precisely down because the recommendations of the Board will have to be put in in a concrete form for incorporation in the tariff schedule.

Mr. Peterson.—You want an actual list of sections, etc. Would it be possible for the Company merely to give a list of the articles manufactured by them?

President.—I am afraid that it will be necessary in order to make the Customs administration possible that things on which a higher rate of duty should be charged should be specified with the greatest exactitude. It may be that in some branch to use a general term would cover a lot of things not intended to be covered.

Mr. Peterson.—The definition of steel we can put as purified iron. That will cover all things.

President.—I should like to point out that experience shows that under a system of protective duties the schedule becomes more and more elaborate and the definitions more and more precise. When there are very heavy duties disputes constantly arise on the question whether a particular article is covered by the definition or not.

We shall be grateful if you will consider the matter.

Mr. Peterson.—It would be very difficult to give a definition.

President.—I fully admit the difficulty but it is a difficulty which the Tariff Board cannot evade, and therefore we must get all the help we can. What we wish to ascertain is what the views of the Company are.

Mr. Peterson.—The definition should be put as "purified iron" and the various sections, etc., which can be manufactured in the next five years should be entered in the schedule.

President.—We should prefer to have a note from you saying just what your proposals are because the Board will require a day or two after getting it to consider how far it met the case.

Mr. Peterson.—I will give you an alternative definition.

President.—I do not wish a definition given just now but will you send me a note?*

---

* Not printed.

Mr. Peterson.—Yes.

President.—I will now turn to the question of the cost of production. You have been good enough to give us in one of the annexures to your statement an analysis of the cost of production at the various stages. In paragraph 6 of the letter to the Government of India which you have annexed to your representation I find the following sentence: "We attach to this letter a statement giving a complete analysis of our costs showing this increase, but briefly it may be ascribed to the increased cost of Indian coal, the increased cost of Indian labour and the increase in the cost of railway services and foreign imports that have followed the war." I do not find this statement printed in your representation to the Board.

Mr. Peterson.—Several of the items in the statement are confidential and so we have not attached the statement.

President.—It is possible that you might be ready to put some of them before the Board.

Mr. Peterson.—Would it be possible for the Board to utilise this statement excluding the pig iron statement? We will give you the statement but not for publication.

President.—The Board will understand that you are not prepared to put in that statement publicly.

Mr. Peterson.—With the exception of the pig iron statement we have no objection to publishing it.

President.—I am not yet in a position to investigate the cost of production because we have to take it from the point of view that the analysis of the cost of pig iron is excluded. But there are certain question as regards the various items which might be useful to put now. I notice that the four last items of the table at page 77 are—

Service expenses,

Interest,

Depreciation,

and Bombay office expenses and Agent's commission. I take it that the same thing applies to all four, namely that the expenses have to be distributed proportionately.

Mr. Peterson.—May I explain the actual position. These are the actual cost sheets (shows the statements to the President). From the actual cost sheets we get the final cost of each item. The Service expense item is distributed over the actual cost.

President.—Take one of the other items—depreciation. In the case of materials you can calculate how much of a particular material you require for a particular process and thus the figure you give may be taken as the actual cost of the material used in that process. But in the nature of the case these last four items cannot be actuals.

Mr. Peterson.—Interest, Bombay office expense and Agent's commission are actuals.

President.—But surely you cannot say that you actually incurred a certain amount of expense in Bombay in converting pig iron into ingots.

Mr. Peterson.—In the same way I cannot say how much of the pay of the General Manager is incurred in making a particular article.

President.—When you are dealing with a material your figure is the amount you spend on this material in respect of a particular process. But in cases like depreciation and Bombay expense the amount can only be spread over by some process of apportionment. May I take it that these last four items are apportionments.

Mr. Peterson.—These are distributed. In the same way other things will also be distributed.

President.—Apart from the last four items are there any which stand in the same position as being apportionments rather than actuals.

Mr. Peterson.—Yard-switching, by which is meant the cost of locomotives, rolling stock, etc. This can only be allocated by taking the total cost and distributing a certain proportion to each product. Steam and power will be distributed in the same way. These will be distributed and will not be actuals. There are several items of the kind that will be distributed and cannot be the actual expenditure on the manufacture of an article at any particular stage:

President.—That is to say we have got to make allowance practically at every stage.

Mr. Peterson.—A good many of these costs will not be distributed at any particular stage of manufacture. Roughly the cost of the General Manager and his office establishment, then I think part of the cost of the town so far as sewage and drainage are concerned will be added. Perhaps it is much better to send the Board copies of the cost statements.*

President.—That will serve our purpose.

Let us now turn to the item "Interest." All I want to know is what is covered by this term.

Mr. Peterson.—The actual interest charged and paid by the Company during the year. It includes debenture interest, interest on cash credit and interest on deposits. It includes, in fact, nothing which the Company is not compelled to pay.

President.—Then the next item is "depreciation." Can you tell us how you arrive at, for the purpose of the costing account, the total amount of depreciation which is to be apportioned.

Mr. Peterson.—It depends on the capital cost of the plant in operation. At present new items of the extensions are continually coming into operation. As they come in we increase the depreciation. It is an estimate and not an actual figure. We know the total capital in operation for the year and on that we calculate the amount of depreciation.

President.—The capital which you take into account as liable to depreciation is, as far as you can ascertain it, the capital invested in plant already in operation. Can you tell us what is the rate of depreciation on that capital, *i.e.*, what you take as fair depreication for the steel trade.

Mr. Peterson.—I think we should say 7½ per cent.

Mr. R. D. Tata.—We take a higher percentage on those machines which work day and night, and less in the case of those which work for half time.

Mr. Peterson.—We take a round figure for this purpose. We have assumed for last year a round figure of 45 lakhs.

President.—May I take it that 7½ per cent. is approximately your average rate which you take in arriving at the figure which you use. Would you prefer to reserve your answer?

Mr. Peterson.—I should say between 7½ and 10 per cent.

President.—Take the item of labour. Does that include skilled European labour?

Mr. Peterson.—All labour except the General Manager and his establishment, and except labour expended on steam what we call producing labour.

President.—It includes the labour actually employed on this particular process whichever it is, but does not include the labour which comes under other items. Therefore it follows that in the total cost there is a great deal more expenditure which is actually incurred as wages of labour than is covered by this particular item.

Mr. Peterson.—Yes.

President.—One question I forgot to ask about Service expense. Does this include the expenditure on the town? Possibly that point may be reserved for another day and we can repeat the question then.

---

* Not printed.

The next question is as regards the nature of protection which it is proposed to be given. I think the proposal you put forward in 1922—and you still adhere to it—was that the 10 per cent. duty should be raised to 15 per cent. and the remaining 18⅓ per cent. should be given in the form of a bounty.

Mr. Peterson.—The Company have no preference to one way or the other. What they are really anxious to obtain is a margin between the present import prices and the price in India sufficient to protect the industry.

President.—I understand that the Company have no decided view one way or the other.

Mr. Peterson.—This is a question for Government to decide. If the duty is objected to protection might be given in the form of a bounty. I think perhaps the duty will probably be much simpler. When we put forward the proposal two years ago we thought the duty might have direct effect on consumption. We do not think that consideration weighs a great deal now. At that time very high prices were ruling in India and these had reduced consumption.

President.—You consider that it makes no difference to the producer but to the consumer and possibly Government finance.

Mr. Peterson.—From our point of view we prefer that it should be a duty. Otherwise it makes no difference.

President.—Assuming that a bounty was decided to be given on products at what stage of the process of manufacture you propose it should be given.

Mr. Peterson.—On the finished article, beams, rails, or sections or whatever it might happen to be.

President.—Does the Company ever sell steel blooms?

Mr. Peterson.—Very occasionally. Their sale is very small.

President.—Might it not be necessary to fix different rates for different articles?

Mr. Peterson.—I do not think so.

President.—I should like to have your opinion from our point of view.

Mr. Peterson.—It might be better to put it on an intermediate stage of the process but I do not think it really makes any difference. The simplest thing would be to fix it at so much per ton on finished steel.

President.—How would you propose that the amount of the bounty should be determined? It is a different case from the import duty. It is difficult to say what the 18⅓ per cent. would amount to.

Mr. Peterson.—The bounty should be fixed for a period of years and at a definite standard at which Government is satisfied that steel can be manufactured in this country at a profit *plus* any duty required to meet abnormal conditions.

President.—That is to say the basis of the whole thing would be an estimate which the Government form as to what is the reasonable price giving a fair profit.

Mr. Peterson.—Any price which would give us ⅓ more than the cost of the imported article will be satisfactory to us. It can be done by giving us a bounty which will give us that amount of assistance for a period of five years.

President.—Then I take it that the basis of the calculation must be what is a reasonable price for the Indian manufacturer.

Mr. Peterson.—I think that must be the essential point.

President.—Turning to the other method of dealing with the import duty I think that in your evidence before the Fiscal Commission you said in answer to a question—page 29 of the printed statement—that you preferred *ad valorem* duties. Do the Company still adhere to that view that *ad valorem* duties are preferable?

Mr. Peterson.—I think we will be inclined to alter that opinion now.

President.—There are three methods actually existing in the Indian Tariff Schedule, (1) *ad valorem* duty, (2) specific duty and (3) duty on a tariff valuation which a combination of the two. These are the three alternatives we ought primarily to consider. We will take up the question again at another meeting but I wanted to mention it to-day so that we could give you an opportunity of considering it.

Mr. Ginwala.—I should just like to run over the principal requisites of steel manufacture and to see how we are situated with regard to these. You have told us that it is a national industry and on that ground it should be protected, but we want to see whether protection is needed on economic grounds. The first requisite you said is ore.

Mr. Peterson.—Ore and coke.

Mr. Ginwala.—Which is more important?

Mr. Peterson.—Both are essential.

Mr. Ginwala.—As to the supply of ore so far as your Company is concerned I take it that you are well supplied?

Mr. Peterson.—I think we have got in Bihar and Orissa according to the Government estimate a supply of about 1,400 million tons of ore. Our estimate at present is about 450 million tons.

Mr. Ginwala.—As you know the estimate of the Geological Survey of India is 3,000 million tons.

Mr. Peterson.—I think it is impossible to say. Much of the ore has not been proved. It might easily be double that.

Mr. Ginwala.—You say that the quality of the ore is very good—60 per cent?

Mr. Peterson.—Yes.

Mr. Ginwala.—Does that appear very favourable when compared to other countries?

Mr. Peterson.—In England the ore worked is as low as 28 per cent.

Mr. Ginwala.—Where do the ores lie?

Mr. Peterson.—Within a radius of a couple of hundred miles from this place. But I think it will be much better if I give you a map* showing the actual distances and exact quantities held by us.

Mr. Ginwala.—Coming to the question of coal you will bear in mind that coal is used in other industries also, such as railways, etc.

Mr. Peterson.—Not in the same quantities. They do not use this particular kind of coal: they use steam coal mostly.

Mr. Ginwala.—You have seen this report of the Imperial Mineral Resources Bureau. In that they make a statement which is not very encouraging. They say that if the present rate of increase in extraction is maintained and an opportunist policy is persisted in, the known reserves of 2,000 million tons of coking coal will be exhausted in 40 years. Is that a correct statement?

Mr. Peterson.—I am not competent to express an opinion on all industries. Certainly it will not be correct in our case. We ourselves have coking coal for 300 years.

President.—At what rate of production of steel with the existing plant?

Mr. Peterson.—Taking the existing plant we require about 2 million tons. All the coal which we use will not be coking coal. 1,000,000 to 1,250,000 tons will be coking coal and the other steam and gas coal, so that our consumption of coking coal when the plant is complete may be taken at 1¼ million tons a year. We have proved over 450 million tons of coking coal. We have also other coal which has not been proved.

Mr. Ginwala.—How much coking coal do you require to make a ton of steel.

---

* Not printed.

Mr. Peterson.—Over two tons of coking coal. We also require gas coal and steam coal. These are different classes of coal and as we use second class coal we have large supplies.

President.—Taking your rate of consumption at 1¼ million tons a year how long is your supply likely to last.

Mr. Peterson.—For over 300 years at least if we do not make any extension.

President.—That implies that you have got 300 million tons.

Mr. Ginwala.—Do you sell your coke?

Mr. Peterson.—No: we have outside contracts for coal but we do not sell any coking coal.

Mr. Ginwala.—Besides this, what else do you require?

Mr. Peterson.—Dolomite and limestone. There are large supplies of limestone but they are not close to our works. The difficulty is in bringing them.

Mr. Ginwala.—You use a considerable amount of scrap.

Mr. Peterson.—Yes. We have a considerable amount of scrap ourselves. We do not buy it. We use many other materials such as manganese. We have a contract with the Central Provinces Syndicate, which are the largest producers of manganese. We have mining leases in Mysore, the Central Provinces and Singhbhum.

Mr. Ginwala.—In brief all the requisite materials are available here and in sufficient quantity. The next question is about labour.

Mr. Peterson.—We have had no difficulty in obtaining as much labour as we want. We have been training apprentices and we can get as many labourers as we want.

Mr. Ginwala.—Can you give us the relative cost of European and Indian labour?

Mr. Peterson.—If the Board wish I shall have a statement* prepared.

Mr. Ginwala.—If you can show us how you have been replacing European labour by Indian labour just to satisfy us that Indian labour is available and is being trained, we shall be very glad.

Mr. Peterson.—I might refer to the blast furnaces which were originally entirely manned by Europeans but in which there is now only one European on each furnace. You might keep this question for Mr. Tutwiler.

Mr. Ginwala.—What is your main difficulty in competing against foreign market? You put down three reasons I think.

Mr. Peterson.—One of our main difficulty is the question of imported labour. Another difficulty is the abnormally low price at which steel is coming to this country. The third difficulty, a temporary one which can be got over in two or three years, is the dislocation of railway services. These are the main difficulties.

Mr. Ginwala.—You say there is a lot of dumping going on. What is your idea as a business man of the tendency of the market?

Mr. Peterson.—It is impossible to say. I can tell you what we are afraid of at present. The settlement of the political question at present pending on the Continent might lead to the release of enormous quantities of stock that have been held up in that territory for months and might cause a tremendous slump in prices. We have no idea whether that will happen or not. On the other hand we are told that the present tendency of prices is high, but our actual last information is that they have gone down again. It is quite impossible to forecast the price of steel for six months or a year.

Mr. Ginwala.—As far as one can see.

Mr. Peterson.—It is highly speculative especially in view of the present conditions all over the world, to attempt to forecast. It might easily go up or down.

---

* *Vide* Statement No. I.

Mr. Ginwala.—Now about these *confidential* reports about prices. I would like to see the newspaper report referred to at page 33, dated 30th November 1922.

(The report* was handed over by Mr. Peterson to Mr. Ginwala.)

You say that you have prepared the statements relating to prices after enquiry. What I want to know is whether these are prices derived by you from your correspondents on enquiries or from newspapers.

Mr. Peterson.—The first statement on page 64 is from newspapers. The second statement contains prices quoted by people with whom we have contracts. The base price fixed is the English price less a certain discount which we allow them. Then the price is fixed quarterly and we decide between us what was the actual import price of British steel landed in India. In order to arrive at that we obtain quotations from England. We say that the price for the last quarter is so and so: they write back and say that they accept it, or they say that the price is too high as the case may be. They sometimes send invoices to support what they give as the price. We have no materials to check it, because they being in the business can obtain actual quotation from manufacturers whereas we cannot. We usually accept their prices in such cases.

Mr. Ginwala.—I am not able to follow this table. (Page 64.)

Mr. Peterson.—The c.i.f. is our price, *i.e.*, the price at which we sell. We know what the insurance and the freight are. We deduct these from it and we get the f.o.b. price. The first statement contains the Home prices. It is always possible to buy for a little less than the actual quotation in the market. We only put in these to show that the prices quoted for export are really lower when it comes to actual business.

Mr. Ginwala.—These prices dropped up to January this year and then there was a little rise. Has it been maintained?

Mr. Peterson.—Up to a point. Foreign competition stopped and the English manufacturer raised his price. During the last month or so foreign competition has once again entered as a result of the depreciation of exchanges in Germany and Belgium and the English manufacturer has again dropped the price to meet that competition.

Mr. Ginwala.—What are the important factors in the market just now? There is a considerable amount of equipment for over-production though there may not be actual over-production.

Mr. Peterson.—We think so.

Mr. Ginwala.—That applies to all your rival countries.

Mr. Peterson.—We think so.

Mr. Ginwala.—There is contraction of the market. You have yourself given a list of countries where there is protection. Therefore it follows that these countries have ceased to be markets more or less.

Mr. Peterson.—They are shutting out the intense competition as far as they can do so and there is therefore a contraction of the market.

Mr. Ginwala.—You have been following what has been happening in Germany before the occupation of Ruhr. Would you take it as a fact that Germany has more or less replaced her pre-war equipment so far as her steel manufacture goes.

Mr. Peterson.—The capacity for steel production has been very much increased.

Mr. Ginwala.—Have you heard that they are stocking very large quantities of steel owing to the exchange trouble?

Mr. Peterson.—Yes, I think that must be so.

Mr. Ginwala.—That of course may be released at any time in considerable quantities.

---

* Statement No. II.

Mr. Peterson.—Yes.

Mr. Ginwala.—Do you know that Germany is now importing a considerable amount of iron which she must manufacture into steel and she is not exporting anything.

President.—Mr. Ginwala's point is that Germany has been importing such large quantities of iron that she must be manufacturing a corresponding quantity of steel.

Mr. Peterson.—Quite so.

Mr. Ginwala.—They might require a large quantity of scrap.

Mr. Peterson.—They find it in Europe, in Belgium chiefly.

Mr. Ginwala.—Then there is the depreciation of exchange. Now taking all these together, is it not quite likely that the price of steel must go down unless the tendency is counteracted by extraneous circumstances not known at present?

Mr. Peterson.—I think it extremely probable.

सत्यमेव जयते

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., Mr. T. W. TUTWILER and Mr. R. D. TATA recorded at Jamshedpur on the 18th August 1923.

Mr. Peterson.—I would like to add something to what I said yesterday. You (Mr. Ginwala) asked us what disadvantages we are suffering at present. I mentioned several but did not mention two which are very important, one is the present high cost of coal which in our opinion is largely an artificial price due to wagon shortage. The other is the high import duties which have raised the price of practically everything we buy although no special protection has been granted to us.

Mr. Ginwala.—I have not dealt with all your difficulties.

Mr. Peterson.—The other thing I would like to add is regarding the reserves of coking coal and iron. I think the General Manager will be in a much better position to give accurate figures on these.

Mr. Ginwala.—If it is convenient to him we shall examine him now.

Mr. Peterson.—The figures which I supplied yesterday are approximate and I should like to put in the correct figures. You asked for a map* showing the actual position of the raw materials. This is the map. The General Manager will give you the exact quantities of coal, etc., held by the Company and could probably also give you an idea of the quantities of coking coal existing in India.

Mr. Ginwala.—That will be very useful. Now we shall take ore first. What is the total quantity of ore held by the Company?

Mr. Tutwiler.—472 million tons.

Mr. Ginwala.—Where is most of it to be found?

Mr. Tutwiler.—It is all within 90 miles of the plant.

Mr. Ginwala.—There is railway connection, I take it.

Mr. Tutwiler.—There is railway connection now to 80 per cent. of it, and only sidings have to be put in to the remainder.

Mr. Ginwala.—There is a great divergence between your figure and the figure given by the Mayurbhanj State.

Mr. Tutwiler.—We hold certain deposits in the Mayurbhanj State, but this is the total of the reserve held by the Company in Mayurbhanj, Singhbhum and Keonjhar. In the case of some of the ore we have not actually got the lease signed, but it is up with the Government and they have given us an assurance that it will be granted.

Mr. Ginwala.—Is not that a very conservative figure, this 472 million tons?

Mr. Tutwiler.—I should say no.

Mr. Ginwala.—It has been estimated at 1,400 million tons.

Mr. Tutwiler.—The Government estimate for the whole area covered by our application is 871 million tons. There is a great discrepancy between the estimates of the Company's geologists and those of the Government. We are actually proving by boring at present and our only information at present is based on surface indications and shallow test pits. I consider the figure I have given safe.

Mr. Ginwala.—Have you any data about the other quantities available.

Mr. Tutwiler.—Do you mean all over India? There are many million tons which have never been touched. I know what we hold and I know that other companies hold as much as we do in this locality.

---

* Not printed.

Mr. Ginwala.—There is so much divergence between your estimate and that of Government.

President.—Do the 871 million tons and the 472 million tons relate to the same area?

Mr. Tutwiler.—The Government estimates are not correct according to our information.

President.—Admittedly there is a very wide divergence of opinion between the geologists and it cannot be proved for 30 or 40 years who is right.

Mr. Tutwiler.—I can give you the difference between our estimate and the Government estimate in one area as a typical instance. We have in Singhbhum in the Jamda area what is known as Block I of this area which covers 2½ square miles. According to our estimate this Block contains 155 million tons and the Government estimate is 247 million tons. But Government have agreed that in that area we should put down borings in consultation with the Government representatives to prove the actual quantity.

Mr. Ginwala.—So far as you are concerned you have got ore to last for how many years?

Mr. Tutwiler.—It depends on how much we use and whether we make any addition to the plant or remain just as we are.

President.—Taking your outturn as it will be when the present extensions are in full swing how long will it last?

Mr. Tutwiler.—We have 472 million tons and we estimate that when the present plant is completed we will require about 1 million two hundred thousand tons annually.

Mr. Ginwala.—Your coal mines are 120 miles off. Are they the only mines you have got?

Mr. Tutwiler.—We have mines in the Jharia and Raneegunge areas, and we estimate the amount of coking coal in them at 410 million tons.

Mr. Tata.—This coal is not held under a lease from Government. We have paid large sums of money for the collieries and they are our own property.

Mr. Ginwala.—What is your consumption a year of coking coal?

Mr. Tutwiler.—1,300,000 tons.

President.—Your consumption of coking coal is regulated by your production of pig.

Mr. Tutwiler.—That is right.

President.—Is coking coal used for any other purpose in the Works?

Mr. Tutwiler.—You can use it for making steam or for any other purpose.

President.—Then if there was likely to be any shortage you would not use it for any other purpose?

Mr. Tutwiler.—No. In that case we would use second class coal.

Mr. Ginwala.—How much have you of the other coal?

Mr. Tutwiler.—91 million tons of gas producing coal and 387 million tons of second class steam coal which is good enough for our purpose.

Mr. Ginwala.—What would be your annual consumption of this coal?

Mr. Tutwiler.—Gas coal—240,000 tons, steam coal—300,000 tons.

Mr. Ginwala.—Then you require more than twice as much coking coal.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—You are constantly making experiments with non-coking coal.

Mr. Tutwiler.—We are making experiments with second class coal. We can obtain coke from it after cleaning it but that can only be done at a prohibitive cost at present. We have not attempted to work it out because we have enough good coking coal.

Mr. Ginwala.—Is it a fact that some of the coal declared to be second class coal has on experiment been found to be coking coal?

Mr. Tutwiler.—No. 12 seam Jharia coal is now considered to be good coking coal. I do not know whether it was considered to be coking coal previously but it was never coked before as in the old days they did not require very much coke in this country before we were here. But we have found this seam to be good coking coal. The Bokharo coalfield is estimated by Government to contain 2,500 million tons which was originally considered to be all non-coking coal. Now the Government authorities say that 1,000 million tons of it is coking coal.

Mr. Ginwala.—So I gather that it is possible that some of the coal now considered to be non-coking may be found to be coking coal after experiment at a reasonable cost.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Do you get much out of the by-products of the coal?

Mr. Tutwiler.—We produce tar and recover sulphate of ammonia. We also use the waste gases in different parts of the plant.

Mr. Ginwala.—Do you find a market for your tar and ammonia?

Mr. Tutwiler.—We find a market for all our sulphate of ammonia but I cannot say whether we can find a market for tar if more people come into the business. I do not know what the consumption of coal tar at present in India is.

Mr. Ginwala.—Are you at any disadvantage in reference to these by-products in comparison with English manufacturers?

Mr. Tutwiler.—I am not in a position to answer. Mr. Peterson can probably tell you.

Mr. Peterson.—English manufacturers have certainly an advantage over us. Tar is used extensively in that country for roads. It is also distilled and there is a large market for the products obtained by distillation. We do not have the same conditions here. But as its production increases, India will ultimately have to distil its tar and we are at present negotiating with certain English firms to start tar distillation in this country. That would extend the market for the product and disinfectants, dyes and all that class of material will ultimately be produced possibly for export, as well as for internal consumption.

Mr. Ginwala.—What do you do with your tar now?

Mr. Peterson.—We burn what we do not sell.

Mr. Ginwala.—Do you mean to say that it will make an appreciable difference in the cost of production of coke?

Mr. Tutwiler.—The higher the price you get for your tar the less the coke will cost you. It all depends on the conditions of the market. We were selling tar at Rs. 100 a ton. We are not selling it at present for more than Rs. 50. It is a question of supply and demand. At the present time there is more supply and less demand.

Mr. Ginwala.—You hope you would be able to start these industries in India.

Mr. Tutwiler.—Yes. It would probably take 10 years to get large chemical industries established. At the present time we are at a considerable disadvantage. Another thing is that we do not get as high a yield of by-products from our coal. As a rule we do not get a much lower percentage of sulphate of ammonia but we get a lower percentage of tar. Our coal at present contains as much as 18 per cent. ash.

Mr. Ginwala.—How does the price of coking coal as you produce it compare with the English price?

Mr. Tutwiler.—It is about the same. The price of coke is higher in England but the ash-content is much lower.

Mr. Ginwala.—If they get larger price for their by-products they will get their coke cheaper.

Mr. Tutwiler.—But they may have to tackle the same trade conditions as we have.

Mr. Peterson.—The price of tar has gone down in England.

Mr. Tutwiler.—I could give you if you like to have it what our increases in the cost of coal have been since we started.

President.—We are going to take up the question of cost of production another day and it will be convenient if we take up all questions of that kind together.

Mr. Ginwala.—The next raw material is dolomite. What proportion of dolomite do you use? How much have you got of it?

Mr. Tutwiler.—We get it 75 miles from here. We get it from two places: Panposh and Rajgangpur. The former is 100 miles away and the latter 126 miles.

Mr. Ginwala.—Have you got enough dolomite for your purposes?

Mr. Tutwiler.—We have got 151 million tons of dolomite.

Mr. Ginwala.—What is your average annual consumption?

Mr. Tutwiler.—440,000 tons. This is what we actually own. Besides this we have long term contracts with another firm which possesses bigger reserves than this. In the same way we have also bought outside coal on long term contracts.

Mr. Ginwala.—Why is that? Is it not more expensive?

Mr. Tutwiler.—We find it more expensive at present.

Mr. Ginwala.—Then why do you do it?

Mr. Tutwiler.—We did it to protect ourselves. When we started our works we owned practically no coal. We bought the coal mine only in 1917. We have twenty-five year contracts based on the price paid by the Mining Engineer of the Railway Board. Contrary to our expectation that price has been steadily raised.

Mr. Ginwala.—Does that apply to dolomite also?

Mr. Tutwiler.—No, that applies only to coal.

Mr. Ginwala.—Then you have also limestone.

Mr. Tutwiler.—We have got nearly 4 million tons. We have some at a place called Bilaspur but that is not of as good quality as we get from Katni which is about 500 miles from this place. Near our own place, near our dolomite quarries, we will be able to get limestone but not of as good a quality as Katni. But our requirements of limestone are only 65,000 tons a year.

Mr. Ginwala.—How much do you expect to get from these quarries?

Mr. Tutwiler.—4 million tons.

Mr. Ginwala.—That will be exhausted in about 10 years.

Mr. Tutwiler.—But we have long term contracts with another firm near us who will give us our requirements and we hold these in reserve.

Mr. Ginwala.—Have your contractors enough you think to give you?

Mr. Tutwiler.—We know that they have.

Mr. Ginwala.—I remember reading some time ago that there was a shortage of limestone within a reasonable distance from here.

Mr. Tutwiler.—There is no shortage of limestone in India; there is plenty in Assam.

Mr. President.—Within a reasonable distance of the works?

Mr. Tutwiler.—So far as our supply of limestone is concerned we have ample supplies within 500 miles, at Katni, etc.

Mr. Ginwala.—Now about manganese. Have you got your own supply or do you buy?

Mr. Tutwiler.—We have our own property but we buy our requirements.

Mr. Ginwala.—Have you got contracts also for that and for how many years?

Mr. Peterson.—10 years at present with the Central Provinces Syndicate.

Mr. Ginwala.—This contract will expire in ten years. What are your requirements?

Mr. Tutwiler.—20,000 tons a year.

Mr. Ginwala.—There is plenty of manganese in this country and there is no question about it.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Then about magnesite.

Mr. Tutwiler.—We have our own magnesite mines in Mysore.

Mr. Ginwala.—1,329 miles off?

Mr. Tutwiler.—We only use 5,000 tons a year. We have got 1½ million tons in our own property.

Mr. Ginwala.—In this also, have you outside contracts?

Mr. Tutwiler.—We do not work our own because we have magnesite near us.

Mr. Ginwala.—Where is that?

Mr. Tutwiler.—We have bought magnesite in Madras but we are able to buy at present foreign magnesite cheaper than we can buy in the country from Austria.

Mr. Ginwala.—What is the duty on that?

Mr. Tutwiler.—I do not know.

Mr. Ginwala.—Then you use chromite. Have you got enough of that?

Mr. Tutwiler.—We have none of our own but we have plenty of that within about 40 miles from here.

Mr. Ginwala.—And in enough quantities?

Mr. Tutwiler.—We only use 6,000 tons a year.

Mr. Ginwala.—That exhausts all your principal requisites.

Mr. Tutwiler.—Except fire-bricks, silica bricks and other minor things.

Mr. Ginwala.—You do not make your own bricks. You get them manufactured by a company in which you are interested. How far have you got to bring these?

Mr. Tutwiler.—From Barakar.

Mr. Ginwala.—What is the total tonnage of these?

Mr. Tutwiler.—Our requirements are now 2½ lakhs a month of both kinds.

Mr. Ginwala.—You think there will be no trouble about getting those.

Mr. Tutwiler.—None at all. There are plenty of fire-brick manufacturers in this country. The fire-clay is found round the coal seams. The silica rock comes from Gaya I believe.

Mr. Ginwala.—Can you tell us whether India will be able to supply expert labour within a reasonable time?

Mr. Peterson.—I think we have promised to put in a statement. May we know the exact form of statement required?

Mr. Ginwala.—I want the proportion of European and Indian labour,* and the difference in pay for the same appointment between Europeans and Indians here. I dare say that you have had European officers in some

---

* *Vide* Statement No 1.

Departments, which are now handed over to Indians. I want to see how it compares.

President.—It bears on the question of the reduction of your eventual cost by replacing foreign labour by Indian labour.

Mr. Ginwala.—I should like to know this much, whether you think that Indians will not be able to replace the American and European expert staff within a reasonable time. Are there any special Departments which Indians will not be able to manage?

Mr. Peterson.—Is not this question more or less answered by our evidence before the Fiscal Commission—see page 25 of the printed statement.

Mr. Ginwala.—It is answered but the reply is general.

Mr. Peterson.—It is very difficult to give an exact answer owing to the fact that many of our new Departments have not yet been started.

Mr. Tutwiler.—I can tell you how many covenanted Europeans and how many Indians we have here to-day. This will give you an idea.

Mr. Ginwala.—Can you say how far you have been able to reduce the number of Europeans?

Mr. Tutwiler.—We started this plant in 1911 with the manufacture of only 59,000 tons of steel and iron. We then had 125 covenanted Europeans and 9,000 employees. In 1921-22 we produced 465,000 tons and we had 93 Europeans and 13,200 Indians and uncovenanted men.

Mr. Ginwala.—The point is what saving you have been able to effect on your labour.

President.—Possibly the information desired might be stated in this way. The statement should show what the total European staff is at present, what their total salaries are, to what extent the company expect to be able to replace them by Indian labour (say) within 15 years, and by what percentage approximately they hope to reduce salaries as a result.

Mr. Ginwala.—Is it because you have to import foreign labour that your costs are high?

Mr. Peterson.—It is one of the causes. But one of the main difficulties of an industry starting in this country is that it has to train the Indian labour that it needs in addition to the foreign labour. It has taken us a long time to train our Indian labour and has cost us a good deal. As it becomes trained the cost of production will go down.

Mr. Ginwala.—You can say that you are spending so much on that and in what time you expect to eliminate foreign labour?

Mr. Peterson.—What I mean is that it is not so much a question of the difference between Indian and imported labour. Indian labour during the actual process of training will not be so efficient as the trained labour in other countries which had a long start of us.

Mr. Tata.—The Directors had in their mind that when an Indian comes to the same position as a European we would not give him more than ⅔ of the pay. That is to be the maximum. That is our idea. Whether we will be able to put it into practice we cannot say. If there is to be an economy it will be on those lines.

President.—That is like the overseas pay in the case of Government officers.

Can you give us the total number of Europeans whom you employ at present with their total salaries and the extent to which in 15 years you hope that you will be able to replace those by Indians. We can make the final calculations ourselves. I suppose that will be in the neighbourhood of ⅓.

Mr. Peterson.—We will prepare such a statement. I would like to suggest that you might ask Mr. Tutwiler what he has been able to do in the way of effecting a decrease in the European element in his various departments.

Mr. Ginwala.—The statement will give us the information. Of course we are not going to tie you down to anything.

President.—A statement of that kind will be useful.

Mr. Peterson.—There is another question on which Mr. Tutwiler may usefully be examined and that is as to the actual proof of the prices of imported steel which we have given to the Board. We have certain invoices which will have to be returned but which the Board may examine now.

Mr. Ginwala.—We were talking yesterday about the difficulties which you have to face from foreign competition. I have dealt with labour and dumping. I also asked certain questions about beams and you were able to show how it was being dumped at lower prices. With regard to rails I do not see that there is any corresponding statement prepared by you.

Mr. Peterson.—There is I think no dumping from the continent as regards rails. All the heavy rails used in this country are British standard and the Railways do not use foreign rails. We are in any case not affected, as, so far as the rail position is concerned, the whole of our output is taken by the Railway Board and other railways at prices much below the price of foreign rails and they get any extra rails they require from England. In our case therefore no question arises as to dumping in rails because we are held down by the railway contracts. We have no surplus rails to dispose of practically until the contract expires or until our production exceeds them.

Mr. Ginwala.—When the greater extensions are worked, that question may arise?

Mr. Peterson.—There would be no question of competition with continental countries because we know that the Railways insist on British rails.

Mr. Ginwala.—How many years' contract have you got?

Mr. Peterson.—Most of them are for six years from the 1st April 1920 and some for three years.

Mr. Ginwala.—The existence of these contracts makes the question a little difficult. Your contract prices I take it were based on the then prevailing prices.

Mr. Peterson.—They were based on the then prevailing prices of raw material, principally coal. We had every reason to expect when the contracts were made that prices would not rise but fall. The price of coal has fallen in every other country. In India it has increased steadily largely owing to the prices paid by Government.

Mr. Ginwala.—I do not understand your statement at page 71. Take the year 1921-22. The c.i.f. price was Rs. 274.

Mr. Peterson.—That on our information was the imported price.

Mr. Ginwala.—You sold at Rs. 174.

Mr. Peterson.—That was a special arrangement with the Railway Board. In that year the Government of India agreed to a special sliding scale by which we got a certain proportion of the difference between Rs. 130 a ton and the price of imported rails. The original contract price was Rs. 130 and the price on the sliding scale came to Rs. 174. The Railway Board agreed in these years to revise the contract price in consideration of the altered circumstances. The Government of India have treated us fairly but except during the last year they have never given us the full price of imported rails.

Mr. Ginwala.—In the fourth quarter of the same year the c.i.f. price is Rs. 156 and you sold at Rs. 156. How was the price brought down?

Mr. Peterson.—We brought the facts to the notice of Government and they agreed to give for that period the actual price of imported rails *plus* duty so that our price was equal to the imported price. The Company Railways refused to make any revision in price, so that for the same period whereas the c.i.f. price of similar rails from England was Rs. 156 the companies paid us only Rs. 122-8-0.

Mr. Ginwala.—How was the price fixed?

Mr. Peterson.—There was a sliding scale fixed by the Government of India by which a certain proportion of the difference between the c.i.f. price and the original contract price was added to the original contract price and that price fluctuated with the c.i.f. price.

Mr. Ginwala.—Then for the other quarter the c.i.f. price was Rs. 186 and the price to the Company Railways was Rs. 122-8.

Mr. Peterson.—Because the Company Railways refused to revise the contract price.

Mr. Ginwala.—What proportion does the contract quantity bear to the total output?

Mr. Peterson.—At present this is our total output of heavy rails.

President.—Can you give us actual figures for the Railway Board and the Palmer railways? Is it not provided in the contracts that a certain tonnage ought to be supplied by the company?

Mr. Peterson.—The Company Railways are bound to take all their requirements from us. No figure is fixed. In the case of the Government of India the total tonnage is spread over a certain period but a different quantity is taken by them each year. They have been taking about thirty thousand tons a year. Roughly speaking in the first two years they take a smaller quantity and for the last years they take a larger quantity.

Mr. Ginwala.—This absorbs your present output. What will be your output when the greater extensions are completed?

Mr. Peterson.—As soon as the greater extensions come into work we shall be able to make more rails.

Mr. Ginwala.—The bulk of these rails will not be affected by the contracts with these companies.

Mr. Peterson.—I should say they will still be affected. These contracts cover 70 to 80 thousand tons and it is not likely that we shall make double that quantity of rails. There is a dispute with the Railways as to the interpretation of the contracts.

Mr. Ginwala.—The difficulty in my mind is this. About 60 per cent. of your output of steel consists of rails.

Mr. Peterson.—At present. In the future that is not so. The total output of steel will be in the neighbourhood of 400,000 tons. The only people who have refused to revise the contracts are the Company Railways. Their requirements are about 30,000 tons a year and the contracts do not prevent us from selling rails to other companies.

Mr Ginwala.—Suppose we give you protection. Then the railway companies will say that the price of their rails has gone up. Therefore they may raise their freight and other charges. So I want to know how much you are bound to give to these companies under your contracts and for how long.

Mr. Peterson.—As I said that is a point on which there is a dispute. There are no less than three separate opinions on these contracts, all different. In any case there will be surplus production not covered by contract and other companies will want to buy rails from us.

Mr. Ginwala.—But they may complain that you are selling at a lower price to the Railway Board.

Mr. Peterson.—That is a question for Government and in any case depends on the contract.

Mr. Ginwala.—You say that the Railway requirements are about 30,000 tons a year?

Mr. Peterson.—It will only be 60 to 70 thousand tons. ¼th of the output when the greater extensions are complete. At present it means a very great deal.

President.—In your opinion what do you think the Companies will require in future?

Mr. Peterson.—I do not think the companies can in any case use more than double the present quantity. They do not contemplate the construction of any new lines at present and for ordinary purposes, maintenance, repairs, etc., I do not think they could possibly require more than double the quantity now supplied during the period of the contracts.

Mr. Ginwala.—But for these contracts protection would not have been needed two years ago because 60 per cent. of your total output is being taken by the companies under contract?

Mr. Peterson.—No. I would not say that. Last year the English price came very near the contract price and the companies said that they could buy rails cheaper. We have of course suffered on account of these contracts. We ourselves had similar contracts either with manufacturers who supplied machinery or with consumers who bought our materials. They represented to us that the conditions had so altered that prices fixed some years ago were no longer fair and in equity we have ourselves revised the prices. That is why we expected the Company Railways to treat us with similar fairness. The Railway Board have done so. They agreed to revise their terms and we expected the Company Railways to treat us in the same way the Government have. There are very few long term contracts entered into four or five years ago that have not been revised in this manner. But the Company Railways have refused.

Mr. Ginwala.—What is the effect of the revision by Government? Does it mean that you lose any money on it?

Mr. Peterson.—Up to the present it means that we do not lose. Last year we were supplying under cost price.

Mr. Ginwala.—So far as rails are concerned you will not be affected by foreign competition?

Mr. Peterson.—I think we would be very greatly affected by foreign competition. Previous to the war there was a close ring known as the Railmakers' Association who had various arrangements between themselves as to export and artificially fixed the prices. It has been suggested to us that we should join that ring on the ground that they could put up the c.i.f. price in India so that we might obtain higher prices from Government. In any case we are bound by the contracts.

Mr. Ginwala.—It is pretty obvious that protection or no protection so long as the contracts continue you are not affected.

Mr. Peterson.—As I have explained, so long as the Government of India maintain their policy of insisting on British standard rails I don't think there will be any question of dumping from continental countries here. England might dump.

President.—So long as you have to sell under contracts the major portion of the production of rails at a fixed price, protection cannot do you any good because it will not affect that price?

Mr. Peterson.—That will only apply to 30,000 tons out of the 60,000 tons. Government have already agreed that these prices should be revised.

President.—That was done as a special case in each of the last two years by Government. That is not binding.

Mr. Peterson.—Yes.

President.—To the extent you do supply rails under this contract to Government or to the companies to that extent you will not benefit by the protection until these contracts expire.

Mr. Ginwala.—Suppose we put 15 per cent. as duty?

Mr. Peterson.—I think in a matter of this kind I would ask the Board to take a long view of the whole question. It is not a matter of three or four years for which period only we are bound by the contracts.

Mr. Ginwala.—What is the total tonnage?

Mr. Peterson.—70 thousand tons.

Mr. Ginwala.—And the Railway Board?

Mr. Peterson.—That is included. They have to take about a further 30 thousand tons each year to complete the contract.

President.—What about the Bengal Nagpur Railway and the Great Indian Peninsula Railway?

Mr. Peterson.—We have no contract with the Great Indian Peninsula Railway at present. The Bengal Nagpur Railway is rather in a peculiar position because we have a very favourable arrangement with them as regards freight and we prefer to leave matters as they are so far as they are concerned.

President.—I should like to know the actual quantity supplied to the Bengal Nagpur Railway.

Mr. Peterson.—14,000 tons last year.

Mr. Ginwala.—What are the other articles you manufacture in which there is competition besides rails and beams?

Mr. Peterson.—All classes of steel.

Mr. Ginwala.—Is there any evidence of dumping or underselling in these articles?

Mr. Peterson.—Yes; these invoices* will show you that.

Mr. Ginwala.—Let us take joists as a basis. What is your position regarding that? How much of that do you turn out?

Mr. Tutwiler.—All joists and structural sections, at the present time about 40 thousand tons a year including small sections.

Mr. Ginwala.—Taking 40,000 tons as the basis how are you situated as regards competition?

Mr. Tutwiler.—The English average price to-day would be about Rs. 170 landed in Calcutta. We sell at that price.

Mr. Ginwala.—That is because your price will be determined by the British market.

Mr. Tutwiler.—Yes. But Continental Steel is selling now at £7-7 c.i.f.

Mr. Ginwala.—What is your evidence?

Mr. Tutwiler.—I have got some of the invoices* here. Here is a case of beams which are coming by the S. S. *Marienfels* at £7-7 a ton c.i.f. That is about Rs. 109.

President.—That excludes duty.

Mr. Ginwala.—That means with the present rate of duty Rs. 120 as against your Rs. 170. How will you get that figure by 33 per cent. protection?

President.—Mr. Tata has suggested that the price now reached is under specially unfavourable circumstances, which should be dealt with by anti-dumping measures apart from the protective duty.

Mr. Ginwala.—Do you say that this is due to any special conditions in these countries or do you think that it is due to reduction in the cost of production?

Mr. Peterson.—It cannot be due to reduction in the cost of production. We have invoices here. One invoice is dated 28th September 1922 and refers to steel plates shipped from Antwerp, Belgium. The mark is "made in Belgium" and the price is £10-12-6. You can compare that with their present invoices* for steel joists imported on S. S. *Marienfels* from Antwerp at a price of £7-7 to-day. There has been no fall in the price of English steel corresponding to that in the last six months. Nor is it possible that any improvement in the process should reduce the cost by over 30 per cent. which is the difference in these prices within this period. Here is another invoice dated 18th April shipped by S. S. *Latenfels* for steel bars, the price of which would be higher than joists—£7-12-6. Another invoice of 1st May at £7-10. Another invoice of steel plates from Hamburg at £7-5-0, dated 21st April. During this period the English price has been about £10-11 even for export.

---

* Not put in.

The low prices cannot be due to any fall in the cost of production.

President.—We may hope that these are entirely abnormal conditions.

Mr. Ginwala.—Would you describe these as temporary circumstances or do you think they will continue for a long time?

Mr. Tutwiler.—It has been continuing since 1919.

Mr. Ginwala.—There is obviously no longer any question of 33 per cent. at all on these prices.

Mr. Peterson.—This is due to the depreciation of exchange in every country including Belgium. We cannot say how much steel is coming from Germany through Belgium.

President.—Will it be possible to explain the difference in the British price and the Continental price by a difference in the quality of the steel?

Mr. Peterson.—I do not think so. In several of these invoices the steel is specified as British standard.

Mr. Ginwala.—The next difficulty you told us about was I think about railway transport.

Mr. Peterson.—There are two difficulties there, one is the dislocation of transport which means that we do not get our raw materials and the other the very large increase in the price of coal to us which is largely due to this. The price has been increased artificially for the last three or four years. The shortage of wagons and transport has created an artificial scarcity and has forced up the cost of coal. In every other country the price of coal has been falling and in this country the price is still going up steadily. Coal which we used to buy for Rs. 4 or 5 a ton now costs us Rs. 10 to 12 a ton. We believe that is due largely to the dislocation of transport.

Mr. Ginwala.—Should we be right in saying that it is a temporary difficulty?

Mr. Peterson.—It may be a temporary difficulty but it has continued for the last three years and if it continues for even a short period might ruin our industry.

Mr. Ginwala.—You have complained about railway freights.

Mr. Peterson.—They have increased. They put on a surcharge two years ago.

Mr. Ginwala.—That surcharge has now been abolished and they have now increased the railway freights.

Mr. Peterson.—The increase in the railway freight does not affect us very greatly as most of our material are carried under special arrangements.

Mr. Ginwala.—You said yesterday that certain facilities are granted in Belgium.

Mr. Peterson.—So we understand. And in France.

Mr. Ginwala.—Do you suggest that it would be feasible here?

Mr. Peterson.—I think the Railways should reduce freights so as to enable the manufacturer in this country to compete with ocean trade.

President.—Might it not be said that the Bengal Nagpur Railway Company have by freight concessions given what is in effect a subsidy to the Tata Company?

Mr. Peterson.—That is rather different. We promised a certain tonnage in return for the concession and the works would not have been erected but for the concessions granted by the Bengal Nagpur Railway at the start. We have given them infinitely more tonnage than promised.

Mr. Ginwala.—Do you make any suggestion that you would like us to consider on the question of railway freight?

President.—I think it is hardly within the sphere of the Board to make representations on this point.

Mr. Peterson.—A very large amount of money has been invested in the plant, construction has been pushed on in order to make that plant earn and we are now being held up as the Railways cannot carry the raw materials. This is largely due to the fact that they cannot handle the traffic. We are at present doing a good deal of work for them and they are doing their best. But this is a hardship and is due to the fact that the Railways were starved for finance.

Mr. Ginwala.—So far as the rates are concerned how do they compare with foreign rates?

Mr. Tutwiler.—I think it would be impossible to answer that question without an elaborate enquiry.

Mr. Ginwala.—Talking of the raw materials you have always complained that this was one of the difficulties in competing with foreign manufactures.

Mr. Peterson.—The complaint is not so much against the freight as against the shortage of wagons for the carriage of raw materials.

Mr. Ginwala.—You also complain that the rates are so high that you cannot compete against these people. Take for example the case of Karachi or even Bombay which you have cited.

Mr. Peterson.—You mean how would American railway rates compare? I am afraid I have not studied that point. I was only comparing railway rates with ocean freight. I think the Government of India have been trying to remedy that. At one time the rates were in favour of the importer. I think you will find that the Industrial Commission has gone into that matter very fully.

Mr. Ginwala.—You were talking of taxation on machinery and other things.

Mr. Peterson.—That complaint is a very general complaint because any increase in duties on machinery, etc., means an increase in prices all round. We have to pay more for our stores, etc.; we have to pay more for our machinery and our labour and we are given no special advantage. No industry could long survive such conditions.

Mr. Ginwala.—Some of the countries have remitted duty on machinery imported. You have not made any proposal on those lines. If you are able to get any relief in this direction, the direct amount of protection becomes smaller and so it prevents the price going up.

Mr. Peterson.—I don't see that it makes any difference.

Mr. Ginwala.—It does to the consumer.

Mr. Peterson.—Government will have to get revenue anyhow. It only means a duty on different classes of goods.

Mr. Ginwala.—You don't want any indirect form of relief at all.

Mr. Peterson.—We want to make the proposal in the simplest possible form as it is urgent that we get relief at once. The depreciation in exchange has altered our views on the subject and we feel we need protection and ought to have it at once. Dumping is more or less a temporary thing and we think could be met either by an increased duty or by some temporary measures.

Mr. Ginwala.—Have you considered how this protection you ask for is going to affect other industries, such as railways, etc.?

Mr Peterson.—Yes, we think it will make a difference.

Mr. Ginwala.—It might well lead to an increase in freights.

Mr. Peterson.—No, it ultimately would lead to reduction of freight. If the industry is firmly established we have no doubt that they will get their rails cheaper. During the war we had artificial protection. As a result we have been enabled for the past three or four years to supply rails—a great portion of the requirements of India—at a price much below that of imported rails. If we have done that in the past I see no reason why we should not do it in the future provided we are helped over the initial difficulties.

Mr. Ginwala.—If this duty is put on and supposing all your contracts expire, it must naturally raise the price of rails?

Mr. Peterson.—The immediate effect will be an increase. It will not be for a long period. The industry will eventually supply India at a much cheaper rate than from outside.

Mr. Ginwala.—Does that apply to all subsidiary industries?

Mr. Peterson.—If the industry is encouraged in this country we should be able to make railway wagons, locomotives, etc., cheaper within this country.

Mr. Ginwala.—Take the case of railway wagons. According to the Railway Committee's evidence 80 per cent. of the material is imported.

Mr. Peterson.—I cannot understand that. The only portions of railway wagons that are necessary to import are springs, axles, etc. That statement must have been made on the assumption that plates were not manufactured in India. At that time we were not making plates.

Mr. Ginwala.—How much material do you think they will import?

Mr. Peterson.—I think you should ask a Railway man that. I think the only materials that cannot be manufactured here at present are springs, axles, and wheels. Plates we can now manufacture, axles and wheels you will have to import for some time unless the Railways adopt disc wheels which could be made from the charcoal iron now being made by the Mysore Iron Works. I think it follows necessarily that if you protect the main industry you must protect the subsidiary industries also where necessary. There are a good many subsidiary industries which are not connected with us but may be very much affected, such as engineering workshops, etc.

Mr. Ginwala.—Which are the industries in which you have an interest here?

Mr. Peterson.—Our interest in them is of two kinds: in some industries we have actually invested and hold shares and in others we are supplying raw materials under long term contracts.

Mr. Ginwala.—I want you to tell us whether they will be affected by any protection that may be given to the steel industry.

Mr. Peterson.—Most of them would be affected after the expiry of five years. I shall send you a statement* showing the period of our contracts with the subsidiary companies, the quantities of steel we are bound to supply them and the rate at which it is to be supplied and also a statement of the capital invested in these companies by the Steel Company.

Protection would assist them in one way very much. They are now in the same position as we were when we started, and have the same initial difficulties.

Mr. Ginwala.—On what principle do you base your 33⅓ per cent. duty? Does it represent difference in the costs of production?

Mr. Peterson.—Roughly we have taken it as giving an average price of Rs. 200 a ton. We have compared that with our cost and considered whether we can afford to manufacture at that price. We took Rs. 150 as the base price of steel landed in this country. We took our average present cost and added a reasonable amount of profit to cover the margin of risk.

Mr. Ginwala.—What would you consider a reasonable profit?

Mr. Peterson.—I should consider 10 per cent. on the capital as a reasonable profit.

Mr. Ginwala.—Not on the turnover?

---

* *Vide* Statements Nos. III and IV.

Mr. Peterson.—No; I should consider that an industrial business to be successful should give at least 10 per cent. because 6 to 7 per cent. may be obtained in other securities.

Mr. Ginwala.—Do you think that would bring in other capital into the industry?

Mr. Peterson.—Yes. We think so. That 10 per cent. will not be 10 per cent. year by year. It may be 2 or 3 per cent. for two or three years and then suddenly there may be a very large increase and when that large increase takes place other capital will be attracted and will come in.

President.—When I pointed out yesterday that in the present schedules there were three methods by which duty could be imposed and asked which you would prefer, you said you would like to take time to consider it. I did not ask definitely for a statement, but I shall be glad if you will give us a statement.*

Mr. Ginwala.—On the *ad valorem* basis description does not matter so much but on the specific basis a good deal depends on the description and probably you require different rates for different articles. For instance you may require Rs. 50 a ton for plates and Rs. 40 for something else.

Mr. Peterson.—In that case we would have to prepare a definite schedule.

Mr. Ginwala.—You suggest yesterday that protection should be in the first instance for 5 years.

Mr. Peterson.—Our original statement was for 15 years.

Mr. Ginwala.—Do you insist upon fixing a date?

Mr. Ginwala.—You suggested yesterday that protection should be in the we could forecast. After that the duty would be varied. We then said, "We have considered the whole question very carefully and have come to the conclusion that a policy which would give the iron and steel industry protection to the extent of 33½ per cent. over imported material for a period of five years which might be gradually reduced within a period of 15 years to 15 per cent. should make it possible for the industry to stand by itself and should eventually cheapen the cost of this essential material to the whole of India." At that time we had not been subjected to the intensive dumping which we had for the last 15 months. We put the longest period about which it is possible to prophesy at five years.

Mr. Ginwala.—We cannot fix the period. It is for the legislature to do it.

Mr. Peterson.—Yes, it is.

We confidently expect exactly the same process to happen as happened in America or Canada. Ultimately prices will fall to the import level.

Mr. Ginwala.—They will only fall when the supply becomes equal to the domestic demand.

Mr. Tata.—If for 15 or 20 years you put on a heavy import duty other plants will also be started.

Mr. Peterson.—The million tons of steel which is consumed in India consist of all classes of steel. The Customs reports do not separate them. There are a good many manufactured articles in it. We think that India's demand for products made by us would not at first exceed our final production by more than 25 per cent.

Mr. Ginwala.—You will maintain the price up to the full level of duty.

President.—What Mr. Ginwala means is this that unless other people start to manufacture steel in India the fact that the Tata Iron and Steel Company can produce steel cheaper would not have any tendency to reduce the internal price.

---

* Not printed.

Mr. Tata.—In fact they have already got companies formed for the purpose of producing steel in India.

Mr. Peterson.—We know of at least three large companies established in combination with English manufacturers who have been discouraged by the tendency of prices for the last three years. The Indian Iron and Steel Company's original idea was to manufacture steel, but they did not proceed with it.

Mr. Ginwala.—What procedure should be adopted to prevent dumping?

Mr. Peterson.—We have suggested that the duty should be increased to 50 per cent. in the case of countries with a depreciated exchange.

Mr. Ginwala.—You know that in other countries, America particularly, they have given the President power to give additional protection within 50 per cent. of the rate fixed after an enquiry by the Tariff Commission that it is due to causes such as depreciated exchange or bounties or something else. Do you suggest some such sort of machinery here?

Mr. Peterson.—I think the simplest arrangement is what they have in Canada. If the exchange of the country is depreciated you discount half the depreciation.

Mr. Ginwala.—But in the case of the German mark it is often more than that.

President.—I do not personally follow exactly what the effect will be.

Mr. Peterson.—Apparently they take the actual depreciation and then discount half of that and raise the customs valuation accordingly.

Mr. Kale.—Are they not following the same system now in India in the case of Germany in proportion to the depreciation in the currency of the country? The valuation of the Customs authorities has been raised.

Mr. Peterson.—In that case it would be better to lay down a countervailing duty in the case of countries with a depreciated exchange. There should be a sliding scale of some kind devised on those lines. If the Board wish us to put forward a definite proposal we shall be glad to do so.

President.—As special measures against dumping have now become a definite part of your proposals* we shall be grateful for any help about dumping.

Mr. Kale.—Information about depreciation of currency we have from day to day but not about dumping.

Mr. Peterson.—In any case where dumping arises the real difficulty is the want of any authority constituted to take any action. The American system is very much like that of Canada. We should prefer to see things follow automatically upon proof of depreciation which is a fact universally known to all from day to day.

Mr. Ginwala.—That may be your proposal; but it will be very difficult to devise an automatic system which will work in all cases. You may find that even that may not give you adequate protection because circumstances might change. In any case, dumping due to a cause other than a depreciated currency cannot be met by your method.

Mr. Kale.—You have given an analysis of the capital which is invested in the industry. I should like to know what is the total that will have been invested when the greater extensions are completed. Working capital is given in the statement here as Rs. 2 crores approximately. What will be the total capital when the work is complete.

Mr. Peterson.—Altogether about Rs. 26 crores fixed capital and working capital.

Mr. Kale.—From the statement you have given it seems that the total amount contributed by shareholders comes to about Rs. 10 crores. There is an additional Rs. 6 crores on debentures and debenture loans. That comes to about Rs. 16 crores. How is the balance made up? I want the information for my own satisfaction. My object is to know whether the return on capital cost would ultimately regulate the price of the output.

---

* *Vide* Statement No. VI

Mr. Peterson.—We borrow our working capital. Also there were reserves.

Mr. Kale.—The money you set aside for depreciation is reinvested in the industry and it means an addition to the capital.

Mr. Peterson.—You want to know the money actually expended and that is about Rs. 22 crores. This consists of share capital, debenture loans, reserves held by the Company and invested in its own business, depreciation, etc.

Mr. Kale.—I make it out to be Rs. 10 crores, *plus* 6 crores *plus* 2 crores and 2 crores again.

Mr. Peterson.—You can take the amount at Rs. 22 crores on capital expenditure.

Mr. Kale.—What do you regard as a fair return on the whole capital invested?

Mr. Peterson.—I have already said that for an industry to be successful it would be 10 per cent.

Mr. Kale.—You are already committed to 7½ per cent. on a certain amount of capital, *i.e.*, preference shares and on debentures so that you will expect in any case on ordinary shares a return of 10 per cent. Now take table B, on pages 78 and 79 of the statement, where the cost of the blooming mill is given, as about Rs. 126·9. You take that as raw material for rails and the price of it is given as Rs. 146·8, *i.e.*, a difference of Rs. 20.

Mr. Peterson.—There is a certain amount of wastage. That is the explanation of the difference.

Mr. Kale.—I want to have another point cleared. In all your calculations, the protection you need, whether this is 33 per cent. or any other figure, is dependent on the maintenance of the present market rate of exchange. The legal or the nominal rate is 24*d*. We do not know what the exchange policy of Government is going to be. But it is positive, I take it, that if Government raises the rate of exchange that means that you require more protection, *i.e.*, to the extent to which there is a change. I should next like to know what are the possibilities of the reduction of cost in the next 5 or 10 years.

Mr. Peterson.—We are looking forward to a considerable amount of reduction in cost but it is impossible to say what that reduction will be. In calculating myself I have estimated that there will be a reduction of 10 per cent. after two years. If the price of coal rises in the interval or some other similar thing happens it might destroy that expectation. Other things being the same the cost will come down.

Mr. Kale.—Is there any other factor?

Mr. Peterson.—The main factors are the price of coal and labour but I do not expect the cost of labour will go down. There is nothing else. There is no possible economy. We are at present working the new plant with the same staff as we employed on the original plant. We have already cut expenditure to the barest minimum. It is not probable that we could devise any economy.

Mr. Kale.—On page 21 of your evidence before the Fiscal Commission you say " the trouble of the world's present system of production and sale is that all the efforts of great producing factories such as those of England, America, Germany and Belgium must tend in that direction." Are you referring to the modern methods of mass production?

Mr. Peterson.—I am referring to the fact that most of these steel interests are combined in great trusts and that many of them have special concessions or advantages in their own country which enable them to sell at low prices in outside markets. They have surplus materials to dispose of and the natural tendency is to send them to the nearest open market. India happens to be without protection against this and the freight is very low. It is the one great dumping ground of cheap steel in the world.

Mr. Kale.—You say further that "sentiment or politics have no place and very little effect in business." But at the end of your representation on page 18 you say "that the whole of the political sentiment of this country is in favour of protection." How do you reconcile those statements?

Mr. Peterson.—In India it will not be possible to sell steel at an anna more on the ground that it is made in India. That is our experience. The second sentence explains itself. The Indian politician is convinced seeing the example of other countries that the policy of protection is one which his country should follow. The word sentiment is used in two different senses.

Mr. Kale.—That is to say, in the long run the system of business is regulated more or less by the political sentiment of the country because you immediately proceed to say: "By a high tariff against foreign goods America and Germany are enabled to sell at low prices in outside markets." That brings in politics and sentiment, does it not? It is admitted that in determining the nation's fiscal policy politics do play an important part. Is it your view that in international trade and industry, business is not much affected by sentiment or politics, but that so far as internal and national policy is concerned, sentiment plays a great part? In America for instance it is the politics of the people which has been at the back of the whole fiscal policy of the country. The Republicans and the Democrats have fought against each other on the issue of fiscal policy there. Your case, I take it, however, is this: that apart from politics and sentiment, even from the business point of view, the protection that you are claiming, will, in the long run, redound to the best interests of the country. It is a favourable circumstance that Indian political opinion and sentiment are in favour of protection.

Mr. Peterson.—I would like to urge what in our opinion is the most vital point. The claim made by the Steel Co., on behalf of protection for the industry, is that it must be maintained for essential military reasons. Even if the industry cost the country enormous sums still it would be essential that it should maintain it. We have an example in Japan. It is essential for self-preservation and that is in our opinion the most important consideration in the case.

Mr. Kale.—So, self-preservation is the first law of existence, and the defence of the country ought to be the paramount consideration in the present case?

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. SAUNDERS, recorded at Jamshedpur on the 20th August 1923.

President.—I understand, Mr. Ginwala, that what you want is a statement from the Company giving as far as they can a complete list of the sections and sizes that they manufacture or expect to manufacture entering against each the current English price and, if they are in a position to give it, what they consider the Company's price ought to be. So far you have given us the manufacturing cost for rails.

Mr. Peterson.—We can give you the c.i.f. price from the trade papers.

Mr. Ginwala.—The Company's selling price must be given and the cost price.

Mr. Peterson.—You want our cost price and the English selling price in the case of each section? That would be a very compendious statement. The extras will be given separately.

Mr. Ginwala.—If a specific duty is imposed it will have to be a very difficult and compendious statement.

President.—You can give us a list of the sections and sizes you manufacture or expect to manufacture with the current English price.

Mr. Peterson.—This can be extracted from the trade papers.

President.—You have already given us your figures for the rails which we may take as the base cost?

Mr. Peterson.—Yes.

President.—Then perhaps you could give us also the trade extras for the various sections and sizes.

Mr. Peterson.—We can give you that but the actual price will have to be worked out for each section. It will depend on the extra.

Mr. Ginwala.—If you will look at the American Tariff Act you will find innumerable sub-headings.

President.—The American Tariff schedule has been elaborated during a period of more than 50 years and we can hardly expect to start with anything as elaborate as that.

Mr. Ginwala.—If protection is to be given in the form of a specific duty it is hardly possible to get away from such a thing.

Mr. Peterson.—You want our cost and you want the English price for the sections c.i.f. (export price). That does not give you the handling charges, cost of bringing them here. We shall give you the English price c.i.f. It is possible that there may be some variation in freight. The freight on bulky materials would usually be less than on the smaller materials. We will send you a statement* showing the c.i.f. price.

Mr. Kale.—I want a similar statement† of pre-war prices of English steel, say for 1913.

Mr. Peterson.—We cannot compare that with our cost because many of the articles were not then being manufactured by us.

Mr. Kale.—What I have in my mind is this. We should like to know whether prices will go back to the pre-war level and if they do go back in the course of the next two years what that level will be. It is for a comparison of that sort that we want the pre-war prices.

---

* *Vide* Statement No. VII.

† *Vide* Statement No. VIII.

Mr. Peterson.—I suggest to Professor Kale that the best way to arrive at that would be to take the base price of say, pig iron or beams or something like that. All other prices will depend on it.

Mr. Kale.—Will it be difficult to prepare such a statement?

Mr. Peterson.—There would be no difficulty at all. But I can give you an instance; the pre-war price of pig iron was about Rs. 45 and it is to-day about Rs. 80.

Mr. Kale.—That is exactly what I want.

President.—I should now like to pass on to the second point that Mr. Ginwala raised. Steel, I take it, is used by every industry in this country to some extent. It is largely used in the construction of factory buildings under modern conditions and it enters also into almost all machinery. Again, steel is of course very largely used in the railways, and any measure which might have the effect of increasing railway expenditure would also tend to increase railway freights. Then finally there are a number of industries in this country for which steel is a raw material, and these are more dependent on steel than others. I take it you would admit that protection would increase costs under all these heads and *pro tanto* prejudice all industries to some extent and some industries to a great extent, at any rate for a certain number of years.

Mr. Peterson.—It must increase the price, but I don't see how it will injure the industry. It all depends on how far the industry can pass on the price to the consumer.

President.—The effect of an increase in price would primarily be to reduce consumption,—would it not?

Mr. Peterson.—That I know is an economic doctrine but in many cases that does not seem to be correct. The increased price resulting from the duty in America and Germany has certainly not reduced consumption.

President.—Supposing measures were taken by Government by which your coal, etc., would cost you more, would you not regard it as a handicap?

Mr. Peterson.—Yes. No one will dispute that protection will increase the price, but it is very difficult to say on what section of the community the increase will fall or that it will necessarily injure any particular industry.

President.—I do not ask for any large admission on this point. But *primâ facie* any industry which had an increase of expenditure put on it would naturally regard itself as handicapped as against its competitors.

Mr. Peterson.—Do you mean within the country or without the country?

President.—I don't care where they are.

Mr. Peterson.—I am afraid I do not quite follow.

President.—All I am putting to you is this that any measure which tends to increase the manufacturing cost of a particular industry will be a handicap to that industry as compared with its competitors who are not subject to that increased cost?

Mr. Peterson.—I should prefer not to express an opinion.

President.—Perhaps I might say, Mr. Peterson, that I am not holding anything up my sleeve to let loose on you suddenly.

Mr. Peterson.—There are many subsidiary industries which if steel is protected ought to be protected also.

President.—We should get on faster, I think, if you could answer my question. I put it to you that the protection of steel must to a certain extent tend to handicap all industries as against foreign competitors and some industries to a great extent.

Mr. Peterson.—It depends on the circumstances of the particular industry.

President.—Well, it naturally would. That is why I ran through the circumstances which will on the whole affect all industries.

Mr. Peterson.—An increase in railway freight will affect all industries.

President.—May I take it that you do concede that point?

Mr. Peterson.—So far as the Company is concerned they are not prepared to say more than that. They are not in a position to say on which particular class of the community the increase will fall. We do not think a general answer is possible.

President.—Do you consider that protection to steel, that is to say protection to the steel manufacture in India, would be for a certain number of years a handicap to other industries in India as compared with the competitors outside?

Mr. Tata.—I do not see how that can be if the foreign competitor is handicapped by the imposition of an import duty.

Mr. Peterson.—I consider this question one of general economic theory. We are quite willing to give our opinion if a specific case is given.

President.—Very well, I am prepared to accept the answer. May I take it then that the Tata Iron and Steel Company has no opinion on the question whether protection to steel would or would not affect injuriously other industries in India.

Mr. Peterson.—If a specific instance is given we would consider it and give our opinion.

President.—I endeavoured to put a definite question, on which you either have an opinion or you have not, which is it?

Mr. Peterson.—We have no definite opinion on the general question.

President.—Then you are not prepared to give any assistance to the Tariff Board on that point?

Mr. Peterson.—I do not see how our opinion will assist them.

President.—When you protect one industry the products of which are more used in other industries than anything else whatever, do you not think that an increase in price of these products would be a handicap to these other industries?

Mr. Peterson.—Naturally if the raw material of the industries in this country is taxed, and the manufactured article from other countries is not taxed, it would be a handicap to the industry.

President.—After all you have made no proposals to the Board as yet for this additional protection that you now seek for those other articles.

Mr. Peterson.—We are interested in other articles but we feel that other industries should be allowed to put their own case.

The Board have not so far asked us to express any opinion on other industries in this country. Speaking generally we are naturally interested as it affects the consumption of steel.

President.—I am afraid I must adhere to my question as to whether you are prepared to express an opinion on the point which I have endeavoured to put to you or not?

Mr. Peterson.—If manufactured articles are allowed to come in free, a duty must affect other industries.

President.—What would you consider the right way of dealing with the situation thus created by the grant of protection to steel? Let us take the industries for which steel is a raw material.

Mr. Peterson.—That is a very difficult question for us to answer, until these industries come forward with their own case. They should know their own business best and whether they do not yet require protection if a duty is imposed. The Steel Company is anxious not to prejudice the case of such industries by statements made before they have put it forward themselves. It would be fairer to them to take our opinion after their representations have been put in.

President.—Have the Company taken into account the question of how far the market for their own products in India might be affected?

Mr. Peterson.—We have considered that. The consumption in India was apparently greatly affected by the high prices prevailing in 1918-19 but it is very difficult to say whether the fall in imports was due to high prices or to difficulty in obtaining raw material. We had no difficulty in selling.

President.—Did the Company take the question of their own market for steel products in India into consideration in proposing an import duty of 33⅓ per cent.

Mr. Peterson.—Yes, otherwise we would have asked for a higher rate of duty.

President.—There is one more question which I think would not be open to the objection of prejudicing the case of other industries. Do you consider that the industries of the country would be in a position to stand a further increase in railway freights?

Mr. Peterson.—That will depend on the increase very largely. Do you mean a large increase or a small increase?

President.—Whichever you like.

Mr. Peterson.—I don't think that the additional price of rails will make much difference. A small alteration in the cost of coal would make a much greater difference.

President.—Do you think that an increase of, say, 5 per cent. in railway rates would seriously affect industries?

Mr. Peterson.—I don't think the duty would lead to anything like such an increase. I think that all industries in this country are under the impression that Railway rates are much too high and should be reduced. I cannot say whether the impression is correct. The increased price of steel would be responsible for a fraction of that increase only. We consider that the cost of labour has increased, the cost of coal has increased and that not sufficient money has been put out to yield a sufficient return and that these are the conditions that have led to high rates.

President.—Do you consider that the industries in India are in a position to stand any appreciable increase in the railway rates above their present level?

Mr. Peterson.—I should say so provided there are compensating advantages. I see no reason why rates should be increased.

President.—I am not in a position to say whether there would be any compensating advantages.

Mr. Peterson.—We would guarantee compensating advantages. Our view of it is that the imposition of a duty of this nature would stimulate industries in this country, would increase traffic, and enable the railways to get out of the difficult position in which they are now.

President.—Let me put to you another very general question. The policy which has been adopted by the Government of India has for its object the rapid development of industries. Therefore the Board in advising the Government of India will have to consider what effect any proposals they make might have in retarding the development of industries.

Mr. Peterson.—I suggest that the Board might examine the Bengal Nagpur Railway as to the effect that the loss of the freight now given to them by the Tata Iron and Steel Company would have on their revenues. We think that the increased price of rails resulting from the duty would not materially affect the railway rates.

Mr. Tata.—The railways will not be affected because they get rails at a cheaper rate from us than they can get them from England or elsewhere. That has not led to any reduction in rates.

President.—That hardly comes in. Do the Company at this stage wish to say anything on this aspect of the case that *primâ facie* it would seem that protection to steel must tend unless compensated for in some way to retard development of other industries.

Mr. Peterson.—We do not think that the additional price of steel rails having regard to the contracts which we have with the Railway, will have any material effect upon the freight rates.

Mr. Ginwala.—The railways do not merely use steel rails. They form perhaps the smallest item in their consumption of steel. There are bridge-works, sleepers, carriages, wagons, etc., which are also the important materials they require. The total of steel rails imported will not exceed 10 per cent. of their requirements of steel products.

Mr. Peterson.—Are you sure the figures are correct?

Mr. Ginwala.—I have taken these figures from the statistics published by the Government of India.

Mr. Peterson.—You say that out of the total steel consumption by the railways only 10 per cent. represents rails. We supply 70,000 tons of rails at present to the railways. If your figures are correct their total consumption of steel is apparently 700,000 tons which is impossible considering the total import into India.

Mr. Ginwala.—Let us take the year 1921-22. The figure for rails was 82,461 tons; value 121 lakhs. The total value of steel products which the railways imported was 11 crores.

Mr. Peterson.—That must be on manufactured articles and not our steel.

Mr. Ginwala.—Locomotives Rs. 2 crores, wagons Rs. 5 crores.

Mr. Peterson.—I think you can only make a fair comparison if you take the weight of the steel.

Mr. Ginwala.—So you have got to take the total amount of steel used in the railways.

Mr. Peterson.—Yes. Steel rails, sleepers and plates must be the largest proportion of the consumption by the railways. We have a statement of their requirements of steel.

Mr. Ginwala.—80 per cent. of the materials for carriages, wagons, etc., would be steel.

Mr. Peterson.—I do not know.

Mr. Ginwala.—In that case prices of steel will go up.

President.—We must get evidence as to the probable increase in railway expenditure surely from the railway authorities. It is little use attempting to investigate that question when we have not got the materials.

Mr. Peterson.—We can give you the actual amount of steel used by most of the railways in India. We have the information from the Railway Board who circularised the railways at our request. The amount is surprisingly small.

Mr. Ginwala.—As I pointed out to you steel rails form a comparatively small portion of their other requirements, such as wagons, sleepers and other things.

President.—Bridge work might be a considerable item.

Mr. Tata.—But they last long.

President.—The point is that an increase in freights might retard the development of industries. When the Company in March 1922 gave evidence before the Fiscal Commission they proposed that the increased protection should mainly take the form of a bounty; had they in view the possible effect on other industries of the enhancement of the customs duty to 33 per cent.

Mr. Peterson.—I think so.

President.—It is I take it of the greatest importance to you that consumers of steel should not be discouraged from using it.

Mr. Peterson.—The Company are very anxious that the subsidiary industries should not be injured. Obviously that is a matter of concern to them.

President.—You are not at any rate at this stage prepared to express an opinion as to the means by which the undesirable consequences to the subsidiary industries might be avoided.

Mr. Peterson.—I am. In our opinion such subsidiary industries as actually manufacture materials such as bridges, railway wagons, locomotives, and things of that kind out of our steel should be protected and possibly should be afforded even higher protection than on steel.

President.—Supposing that policy were adopted in the case of railway wagons, that will mean increased expenditure to the railways.

Mr. Peterson.—That seems to me inevitable.

President.—Would Mr. Ginwala like to pursue this question? What I have got in my mind is to give you an opportunity of saying anything that the company wants to say on this point.

Mr. Peterson.—I think we have stated all we have got to say on the subject in our representation.

Mr. Kale.—Shall we take it as the company's opinion that if steel is protected to a more or less extent the consumers of that steel in this country will be adversely affected? To what extent they will be affected we are not in a position to judge at present. But so far as one can see, will not some industries be adversely affected?

Mr. Peterson.—Not necessarily the industries. The consumers of the articles manufactured by the industries will be affected. If they are not imported many of these articles will be manufactured from our steel: in that case the consumer will have to pay the additional price.

Mr. Kale.—If articles which will be manufactured out of steel supplied by you are imported to-day, will not these industries be adversely affected unless they are able to pass the increased cost on to the consumer?

Mr. Peterson.—Or unless a similar duty is imposed on the imported article.

Mr. Ginwala.—Can you suggest any principle by which this can be done such as a compensatory duty?

Mr. Peterson.—We are prepared to consider it.

Mr. Ginwala.—Supposing you have got 10 per cent. protection: how much do you think the other industries should have?

Mr. Peterson.—If you wish us to submit our opinion on that we shall be glad to do so but we have not had an opportunity of considering it.

Mr. Ginwala.—Mr. Peterson suggested that if steel is protected there should be a compensatory protection to the subsidiary industries. I want to know how he would suggest that this should be done.

Mr. Peterson.—I think our opinion will be much more valuable if the representations are obtained from the industries likely to be affected and our opinion is asked for after these representations have been heard. We have no accurate knowledge of their processes of manufacture and costs and it will be very difficult for us to give an opinion now.

Mr. Ginwala.—You are asking for 33⅓ per cent. You know how much steel you are selling to these people. I assume that they buy the whole of their requirements from you.

Mr. Peterson.—It might depend on the margin of profit to the manufacturer, *i.e.*, the additional value they obtain by converting the steel into something else. I do not think that the Steel Company is entitled to prejudice their case before it is actually put forward. In one case our steel is submitted to an extremely simple process and the value of the steel is increased by nearly 150 per cent. In a case of that kind possibly no protection would be required. I can only give you an answer in specific instances but I do not think it would be fair that I should give you these special instances until these industries have had an opportunity of stating their case if they desire protection.

Mr. Ginwala.—I am not asking you about any other industries of which you have no intimate knowledge but only of those located in Jamshedpur. In the matter of consumption of steel will you please say how these industries are situated?

President.—I do not think that it would be quite fair at this stage **to ask Mr. Peterson to express an opinion on these industries. As things stand at present none of them has yet asked for compensatory protection.**

Mr. Ginwala.—With the protection of the main industry we must bear in mind what effect it is likely to have on other industries?

President.—Might I take it that your answer would be that each of the industries which would depend on the consumption of steel will have to be considered separately?

Mr. Peterson.—Certainly. We would be quite prepared to assist the Tariff Board in this respect but we would prefer to do that in each specific case after the industry has stated whether they require protection or not. I might make an exception in one or two cases which are a matter of military necessity as the steel industry is itself. One such industry is undoubtedly the manufacture of rolling stock in this country. The manufacture of rolling stock in this country should be encouraged whatever it may cost.

President.—The next question I would like to ask is about the possible form which bounty should take. The first point is this. Would the company wish to adopt a system by which the payment of bounties would be subject to some limits as to the profits earned by the producers. I think in Australia there is a limit of that kind.

Mr. Ginwala.—There are two limitations in Australia:—

(1) that in any particular case the protection should not cost in a year more than a certain amount:

(2) No industry is to get any bounty if its profits exceeded 15 per cent.

Mr. Peterson.—We have no objection to such a system but it would, of course, depend on the actual figures.

President.—Do you think that the amount to be given in bounties in any one year should be subject to any total limit and how would you fix that limit, that is to say, would you go on paying bounties supposing the production in India greatly exceeded its consumption?

Mr. Peterson.—It is a very hypothetical question. That state of affairs is not likely to arise for at least 20 years. But when we do become a large exporting country any system of bounties will naturally cease to be operative.

President.—At any rate at the present stage you do not think any question need arise as to a limitation of the amount paid on bounties.

Mr. Peterson.—No.

President.—There is one other matter. On Saturday you expressed as opinion that the system adopted in Canada for dealing with the import from the countries with depreciated currency was a good one.

Mr. Peterson.—We have prepared a definite schedule*. We have made a definite proposal which I can explain if you want it.

President.—I think I won't touch on that to-day. If you will send it we shall be glad.

Mr. Peterson.—Mr. Tata is leaving for Bombay to-day and we would like that this question be taken up now.

President.—In that case we may proceed now.

---

* *Vide* Statement No. VI.

Mr. Peterson.—We propose two principles in dealing with countries with a depreciated exchange. One is that 25 per cent. of the depreciation should be ignored and after that the tariff should be automatically increased exactly in proportion to the depreciation. Then in the case of Indian exchange we suggest that any variation either up or down should be compensated by increasing or reducing the duty with any reduction or increase of exchange.

Mr. Ginwala.—I do not follow. Give us a concrete instance.

Mr. Peterson.—Supposing that the French exchange which is normally 25 francs is 100 francs to the £. We should ignore 25 per cent. of the depreciation, that is 18·75 and for the remainder we should value the incoming material at the normal exchange, *i.e.*, 25 francs to the £. We exclude that 25 per cent. in order to avoid minor variations and to avoid dislocation of commerce, as far as possible.

President.—If a system of this kind were adopted it would have to be applied to every country and in the case of Germany the results would be preposterous.

Mr. Ginwala.—Is this proposal due in part to a distrust in the accelerating powers of Government.

Mr. Peterson.—No. To meet the special depreciation in currency which has occurred. The Canadian manufacturers are already asking for an increase which is due perhaps to the depreciation in the German mark.

Mr. Ginwala.—The Fiscal Commission did not think that the Canadian system should be followed. They recommended the Australian or the United States system, which is that the Government should hold an enquiry through the Tariff Board.

President.—We have not got the Canadian Act. What I notice in your memorandum at p. 39 of your representation is that in the case of depreciated exchange not more than 50 per cent. of the depreciation should be taken into account in valuing goods for duty. That suggests that it may be less. It may not vary in one direction but it may vary in the other. If it varies there must be some authority to fix the variation.

Mr. Peterson.—The variation here would be in favour of Canada, that is to say, a higher figure than 50 per cent. may be taken.

President.—Do you take it that the basis of the Canadian proposal is that the goods imported are usually invoiced in some foreign currency?

Mr. Peterson.—I do not think so. I think goods from Germany are probably invoiced in sterling but the country of origin is declared. I think that is the law but I am not certain. Of course it is extremely difficult to make any recommendation to meet the present depreciation of the German mark.

President.—Let us for a moment take the case of Belgium. You would find that after your proposals were put into operation it would have the effect of raising the valuation of Belgian goods for tariff purposes to an extraordinarily high figure.

Mr. Peterson.—The case of Germany had not occurred to us.

President.—Here is a Consular report on the economic situation in Belgium. It is stated:

> "Wages are now anything between three and six times as great as they were before the war. Pit workers for instance in the coal industry who received 5 to 6 francs per 10 hours' day in 1913 obtained 12 francs in 1919 and now get as much as 32 to 34 francs per 8 hours' day. Metal workers' and Engineers' wages vary from francs 1·75 to francs 3·00 per hour compared with franc 0·25 to franc 0·50 in 1913."

(Page 93 of the Report on the Economic situation in Belgium at the end of 1921, issued by the Department of Overseas Trade.) The rise in wages of course cancels the advantage the Belgian manufacturer obtains from the fall in the exchange.

It is that that makes me doubt whether any sort of automatic system could be introduced, because it might operate in the most impossible way. India might be prevented from getting the very goods which it required from a particular country.

Mr. Peterson.—I do not think there is any great danger of that. You are referring to other industries than steel. In the case of steel we can get it from countries where the exchange is normal and is likely to remain normal.

President.—But can you take the pre-war rates of exchange as the normal rates of exchange?

Mr. Peterson.—We might have to increase that.

President.—But would not that involve the decision of somebody as to what would be the *fair* rate to take. Then the system will cease to be automatic.

Mr. Peterson.—I do not know whether any system of a sliding scale can be worked out.

President.—I feel doubtful whether we can carry this discussion further to-day for the reason that it is extremely complicated and we have not actually seen your note on the subject.

Mr. Peterson.—It is merely a statement of facts. It is not a note.

President.—I don't feel that until I have actually seen the Canadian Act that I have got a complete grip of what exactly the proposal is. I should like to take the other question of the possible appreciation of the rupee as compared to all other Currencies.

Mr. Kale.—Is it not possible to take the par of exchange when making any calculation and then allow for the departure therefrom? Take the cross rate to-day between England and America. The par of exchange was 4·86 dollars and to-day the pound sterling is in the neighbourhood of 4·6 so that we will have to reduce that rate to the par of exchange.

President.—It is more than that. The proposal made by the company following the Canadian precedent would apparently raise the valuation for tariff purposes very much above the corresponding value at the par of exchange. We have not really grasped exactly what the proposal is, and that is why I do not want to proceed with the examination of this point to-day.

Mr. Ginwala.—This is the Australian system which is similar to the Canadian system. (Showed the Australian Act to the President.)

President.—It may be that the Australian system is more appropriate in so far as we understand it at present.

Mr. Peterson.—I think it would operate successfully in the case of countries whose exchange has depreciated normally but not in the case of countries with an abnormal depreciation. I do not see that any arithmetical system can be applied to any country like Germany. I think that must always be a special case.

President.—There is one other question which I want to put to you: what will be the effect in the event of a rise of the Indian exchange? Let us suppose that the value of the pound sterling falls from Rs. 15 to Rs. 12.

Mr. Peterson.—We would for tariff purposes take Rs. 15 to the £.

President.—Are imported goods generally invoiced in British currency?

Mr. Peterson.—They are usually invoiced in British currency. I think continental manufacturers usually show their invoices in sterling too. Very often the quotations contain both. They say in their invoices that the cost is so many francs, say, equal to so many pounds sterling.

President.—If you want the cost expressed in pound sterling and the rupee I can see how it would operate. But when you have other currencies jumping about unless you bring them to the pound sterling, I do not see how the scheme will operate.

Mr. Peterson.—You can do that. As a matter of fact quotations are always either in sterling or in rupees.

President.—I do not see how you are going to apply it. It would involve a very considerable amendment in the definition of "real value" in section 30 of the Sea Customs Act. This is how it runs:

"(a) the wholesale cash price, less trade discount for which goods of the like kind and quality are sold or are capable of being sold, at the time and place of importation or exportation, as the case may be, without any abatement or deduction whatever, except (in the case of goods imported) of the amount of the duties payable on the importation thereof: or

(b) where such price is not ascertainable, the cost at which goods of the like kind and quality could be delivered at such place, without any abatement or deduction except as aforesaid."

Hitherto the Indian Customs law has not taken account of the prices in the country of origin.

Mr. Peterson.—Our object of course is obvious. If protection is accorded it might be entirely removed by an increase in exchange. If it is necessary to afford protection at all it should be real and not nominal.

President.—Unquestionably. But I am not clear as to the machinery by which it is proposed to secure this result. I can see how it can be done provided the prices are always expressed in British currency.

Mr. Peterson.—They can always be reduced to British currency, provided we know the exchange of the country of origin.

Mr. Kale.—Our currency will always be expressed in gold or sterling. We know the cross rate between England and France and we know the relation between the rupee and the sterling.

Mr. Peterson.—We can always convert the cost into Indian currency by taking Rs. 15 to the pound.

Mr. Kale.—All our rates are quoted in the newspapers on that basis.

Mr. Ginwala.—You will be constantly upsetting the import market by adopting this meticulous system.

Mr. Peterson.—I do not think so. If you impose a protective duty you must be certain what you are imposing.

Mr. Ginwala.—Suppose the exchange is more or less normal with regard to some countries. Would you suggest any alteration in rates in that case? Take the case of the United States exchange or the English exchange. There may be small alterations in the exchange. According to your system it will make provision for the slightest alterations.

Mr. Tata.—Not if we fix Rs. 15 for the sterling and make no alteration at all.

Mr. Ginwala.—Supposing instead of Rs. 15 it came to Rs. 14-8.

Mr. Tata.—We would always calculate at Rs. 15 whatever may be the alteration in the Indian currency.

Mr. Ginwala.—You cannot work the system at all. I agree with you that you must get the protection which the legislature may intend to give you, but its amount should not be capable of automatic variations with the slightest change in the circumstances. When there is an abnormal change of conditions there ought to be machinery by which it can be rectified, but if the variation is slight then there need be no disturbance. It is an international business. It is not merely India you disturb: you disturb the whole market if you go on constantly changing the tariff.

Mr. Peterson.—I think the tariff will not vary so much. If the exchange does not fluctuate very much I do not think the importer or the exporter would consider it. But if the exchange varies greatly then it is necessary that the necessary alterations should be made.

Mr. Ginwala.—But your system will alter the valuation with each change, however slight.

Mr. Kale.—You said that when there is depreciation in the foreign exchange you would like to have additional protection to that extent. I think the system I was suggesting would be simpler. You know what the par of exchange for each country is and from that you know the depreciation. You want protection to the extent of that depreciation, and if we fix it at that I do not think there will be much difficulty. The case of Germany should be left out of account at present.

Mr. Peterson.—When exchange is not abnormal our system will work.

Mr. Kale.—In the case of all exports and imports we always provide for future exchange two or three months hence so that you will be able to provide for these fluctuations? I know there will be fluctuations but the exchange will be fixed every three or six months and in that case we shall arrive at some stability in the market?

Mr. Peterson.—That will affect tariff valuations only every three months. Instead of the Government of India fixing the tariff valuation each time they need only fix it every three months.

Mr. Saunders evidence was now taken.

Mr. Ginwala.—You are a graduate of the Sheffield University.

Mr. Saunders.—I took the Honours course at the London University but I was at Sheffield as well.

Mr. Ginwala.—You had your practical training at Sheffield.

Mr. Saunders.—Yes.

Mr. Ginwala.—How long have you been in charge of the Institute?

Mr. Saunders.—Since it commenced in 1921. I was here for a month before that.

Mr. Ginwala.—What is the course of study prescribed and for how many years?

Mr. Saunders.—The ordinary course is for two years followed by a further period of one year in the works during which time the students will be really under my control still. During the first two years the students spend alternate weeks in the Institute and in the Works. We thus have one class in the Institute and one class in the works every week.

Mr. Ginwala.—When the students are in the works they are in charge of the Works Manager?

Mr. Saunders.—Under the Works Superintendent.

Mr. Ginwala.—This goes on for the first two years.

Mr. Saunders.—Yes.

Mr. Ginwala.—During the last year they go to the Works as whole time apprentices.

Mr. Saunders.—This is the scheme I have put up to the Governing Body. By their third year they should have had sufficient theoretical training to be able to carry on by themselves with their further studies which bear on the plant in which they are specialising. They will do regular whole time shift work during their third year.

Mr. Ginwala.—Do you train these students to understand the work of all departments or specialise at any particular stage?

Mr. Saunders.—At present the Institute train for three Departments:—the Blast furnaces, Coke Ovens and the Open Hearth and in exceptional cases Rail mills. The Coke Ovens Department includes By-products.

Mr. Ginwala.—How many students do you have?

Mr. Saunders.—We took 24 in the first and 29 in the second lot of admissions. We expected to discharge a good many of those 29.

Mr. Ginwala.—Are these admissions made with reference to the requirements of the steel works?

Mr. Saunders.—My instructions are that we should take 25. I understood from the General Manager when starting up, that he thought that it was about all we could manage at that time, the first year being rather of an experimental nature. In the second year we took more. I advised that 24 each year would be sufficient.

Mr. Ginwala.—I take it that 50 students would be the requirements of the works at present?

Mr. Peterson.—I must explain that we have had to limit expenditure on the Technical Institute for financial reasons.

Mr. Ginwala.—This is only a certain proportion I take it of the requirements.

Mr. Peterson.—The actual expenditure on the Institute is limited by the amount of funds we can afford to give it at present.

Mr. Ginwala.—How many students would you have to select if you had to recruit for the complete requirements of the Works?

Mr. Saunders.—I hope to pass out 18 each year for particular jobs.

Mr. Ginwala.—Have you considered the question of recruitment?

Mr. Peterson.—Owing to the fact we had no money we did not consider the question. It is very difficult for us to say anything about it because our recruitment in the future will be very different from our recruitment in the past, after the extended works come into operation.

Mr. Ginwala.—The point we have to consider is whether sufficient expert labour is being trained here for your requirements?

Mr. Peterson.—I think the best answer you can get to that will be the statement* that is being prepared by the General Manager showing the covenanted labour in the Works whom these students are expected to replace.

Mr. Ginwala.—Is there a large percentage of "casualties"?

Mr. Saunders.—The rejections in the first year were 25 per cent. We recruited 24 in 1921; we have got 18 of these left in our school. Last year we recruited 29 and we have got 20 left. There is a Selection Committee who make these admissions. The rejections are made by the Governing Body. The Punjab men were seen by the Director of Industries, Punjab, and the Director of Industries, Madras, has very kindly examined and sent the best of his men. When they come here they appear before the Selection Committee and then there is a further weeding out. There is also a medical examination at the same time.

Mr. Ginwala.—What is the main cause of rejection?

Mr. Saunders.—We find that the I. Sc. Indian qualification is not a very high qualification. We generally have to reject a great many for not being up to the required standard.

Mr. Ginwala.—Has it anything to do with physique?

Mr. Saunders.—We do take it into account at the same time. For instance, if a man is not good in theory but at the same time is found to be very hardworking in the Works I generally put that point to the Governing Body and they would consider his case.

Mr. Ginwala.—How many applications do you get for admission?

Mr. Saunders.—The enquiries we got for admission were about 2,800 last year.

Mr. Ginwala.—Out of that you selected 24.—Out of 2,800! and out of that 6 or 7 are to go in a short time?

What are the conditions on which they are admitted?

---

* *Vide* Statement No. I.

Mr. Saunders.—They are paid Rs. 60 a month and they are expected to keep themselves with that. Quarters are not given to them but we charge them Rs. 2 only per room. They make their own messing arrangements and they are not charged any fees. We also lend them all the books they require and when they leave the Institute if they are not taken on by the Works they return these books, but if they are taken then they will have to pay the cost of the books in instalments from their pay.

Mr. Ginwala.—After they are taken on by the Works what do they get?

Mr. Saunders.—They get Rs. 200 a month and they sign a contract for five years. Of course there is no definite promise that they will be taken, but if they are successful I expect they will be taken on, and in that case this is the minimum that the Company will pay.

Mr. Peterson.—They are not limited to that pay if they are worth more. The Company undertakes, if their work is satisfactory, to pay them more. The particular clause in the agreement is—"Rs. 200 per month with increments dependent on personal ability."

Mr. Ginwala.—I understand the open hearth department is most dangerous and the work more strenuous and it is much more difficult to get any expert labour trained for that than in the case of Blast furnace. Is this so?

Mr. Saunders.—It is generally thought that the open hearth does require better physique than the blast furnace but if you ask the Blast Furnace men they disagree with this.

Mr. Ginwala.—Do you find any unwillingness on the part of these students to learn this Open Hearth work?

Mr. Saunders.—Many of them even prefer it because they consider it a more interesting branch.

Mr. Ginwala.—How many students have you got for the Open Hearth?

Mr. Saunders.—Open Hearth—6. Blast Furnace—6. Coke Ovens—5. Rail Mills—1.

(This refers to the Senior Class.)

Mr. Ginwala.—In your opinion so far as the students are concerned, they consider Open Hearth more attractive than the other kinds of work.

Mr. Saunders.—They are not very particular.

Mr. Ginwala.—What is the total expenditure on this Institute?

Mr. Saunders.—About a lakh of rupees.

Mr. Tata.—But this sum will increase every year.

Mr. Peterson.—I shall give you the actual expenditure* on the Institute for the last two years with recurring expenditure and grants from the various Governments.

Mr. Ginwala.—Have you any project for expansion?

Mr. Peterson.—Any project for expansion will largely depend on the assistance obtained from various Governments.

Mr. Ginwala.—What assistance do you get from Provincial Governments?

Mr. Saunders.—The Government of Bihar and Orissa give us Rs. 25,000 per annum. The Government of Bengal Rs. 10,000. The Mysore State have been paying up to now for the training of their own students at the rate of Rs. 2,000 per annum, per student. Messrs. Burn & Company pay Rs. 3,000 for one man. That may be taken as the cost of training.

Mr. Ginwala.—I see that Bombay and Burma are not represented at all. Is there any special reason that you have been able to find out?

---

* *Vide* Statement No. IX.

Mr. Saunders.—We have not received any suitable applications from Bombay.

Mr. Peterson.—A certain number of vacancies are reserved for the Governments which give us grants.

Mr. Tata.—We wrote to every College in the Bombay Presidency and only one man came here but was found to be physically unfit.

Mr. Ginwala.—Did you write to the Ferguson College?

Mr. Tata.—Scores of times but nobody came from that College.

Mr. Kale.—I should like to know the number of applications received from the Colleges in Bombay and why they were rejected.

Mr. Peterson.—I shall ask the office to send you the information.*

Mr. Ginwala.—When they have completed their course are they taken by the Tata Works on your certificate or on that of the Works Manager?

Mr. Saunders.—The General Manager will probably consult the Superintendent of Works and give weight to his opinion. The staff of the Institute also personally go to the Works and see what progress the students are making.

Mr. Ginwala.—Do you get reports from the Superintendent as to how the boys are getting on at the Works?

Mr. Saunders.—If he has anything to say a Superintendent will write a report in favour or against the men as the case may be.

Mr. Kale.—Am I to understand that there is no binding upon the Company to engage any of those who pass out of the Institute?

Mr. Peterson.—No.

Mr. Kale.—Provincial Governments, in the case of primary school teachers they train, bind themselves to engage them. Should not the Company bind themselves in the same way in the case of these men?

Mr. Peterson.—I don't think that any commercial firm would bind themselves to engage men if their work is not found to be satisfactory.

Mr. Kale.—I mean in the case of people who are found to be efficient. I think the Company should endeavour to know exactly how many it is possible to take each year?

Mr. Peterson.—Our demand for this class of labour is very large and any student who is capable will undoubtedly obtain employment for some years to come. At present our difficulty is to get men of that class.

---

* *Vide* Statement No. X.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. T. W. TUTWILER recorded at Jamshedpur on the 23rd August 1923.

President.—The question the Board would like to take up to-day, Mr. Peterson, is the general question of the cost of production of steel as shown in the statements you have placed before us.

Mr. Peterson.—Before we take up the business of the day may I mention two questions that arise out of the last examination. The first is the question of compensating protection. We have considered that very carefully and we are now prepared to give a considered reply. We were asked by the President what would be the effect of the protection of steel on industries using steel as a raw material. We replied that it was impossible to answer this question accurately unless the particular industry and its conditions were specified and that we would prefer not to prejudice the claims of subsidiary industries by making statements before their representations were put forward. If the Board prefer it I can hand in the written answer.

President.—I think it would be better if you handed that in.

Mr. Ginwala.—What industries are you dealing with in that note?

Mr. Peterson.—Industries in general. We have simply laid down certain general principles.

Mr. Ginwala.—If you leave that note with us Mr. Peterson, that will be very helpful. If we want any supplementary information we shall ask for it.

(The note* was then handed in.)

Mr. Peterson.—The other point concerns the possible increase in railway freight resulting from the duty on steel. I have certain figures which I have worked out from the Railway report of 1921-22 which might interest the Board.

President.—If you have that in writing you can hand that in also.

Mr. Peterson.—I will prepare a note and put it in.†

Mr. Ginwala.—Do you take the cost of steel rails only or of all other kinds of steels?

Mr. Peterson.—We do not know what the figures for the others are. With regard to the question of the cost of production of steel I am not authorized by the Directors of the Company to explain the costs in full detail or the method by which they are obtained or the manufacturing practice publicly.

President.—Are you prepared to state briefly the reasons on account of which—

Mr. Peterson.—We have given a summary of our costs of production and we are prepared to satisfy the Board in private that the figures given in the statement are correct. But if we are publicly examined in detail as to each particular figure and how it is obtained then in order to answer we have to disclose publicly the whole of our manufacturing practice and that would be an unusual thing for any commercial undertaking to do. Before I could do it I would have to obtain the sanction of the Board of Directors.

Mr. Ginwala.—Are there any trade secrets that you are afraid of divulging—I mean in the process of steel manufacture?

---

* *Vide* Statement No. XI.

† Not printed.

Mr. Peterson.—The real point is the quality and quantity of the materials used at each stage and the productive efficiency of the plant. Also you cannot go into the question of the cost of steel in detail unless you also go into the question of the cost of pig iron. We have competitors in this country in pig iron and any enquiry into its cost must disclose our manufacturing cost, and our practice of manufacturing pig iron to them and that would affect us considerably in selling. There are at present three concerns in this country who are exporting pig iron to Japan and who are competing with us in that market as well as in the Indian market. Obviously any disclosure of our costs might affect the price, which we could obtain.

Mr. Ginwala.—That might be for the benefit of the public.

President.—But the first duty of the directors will be to their own shareholders.

Before I say anything further I should like to have an opportunity of discussing with Mr. Kale and Mr. Ginwala this question as it is very important.

Mr. Peterson.—I would like to suggest this. In order to save the Board's time if they will take the evidence now in private we will see what questions are put and will then be able to ascertain whether there is any objection to any of the points raised being published. I would then lay the record before the Directors and ask them whether they are prepared to publish these figures and statements. It will depend on the questions.

President.—I think the simplest plan will be to adjourn for a moment and discuss with Mr. Kale and Ginwala and then we will return and indicate our position.

(The meeting then adjourned.)

President (on resuming his seat).—Mr. Peterson, I was anxious before saying anything to have an opportunity of consulting my colleagues because this question of publicity is a very important one. The Fiscal Commission whose recommendations resulted in the appointment of the Tariff Board, laid the greatest possible stress on publicity. What they said is this:—

"The province of the Tariff Board will be to make detailed enquiries into the claims for protection referred to it, and to express its conclusions in the form of detailed and definite recommendations. There is one point in connection with the enquiries and reports of the Tariff Board on which too great stress cannot be laid. This is the need for the utmost publicity. Publicity will ensure full consideration being given to all interests affected. Publicity will also inspire confidence and remove the possibility of suspicion that recommendations are based on anything but the public interest. The case for and against protection of each industry should be stated with a perfect frankness and lucidity, so that the public may be in a position to form its own judgment. Nothing else is so likely to minimize the dangers of political corruption to which we have already referred. We do not mean necessarily that the whole investigation conducted by the Tariff Board should be held in public. But we feel it is essential that the fact that enquiry is taking place should be widely known, that all possible interests should have every opportunity for representing their point of view, that a formal enquiry should be held in public, and that the Government should publish the results of the enquiry promptly, whether it agrees with the conclusions of the Board or not."

Now the question which has been referred to the Tariff Board by the Government of India is whether protection should be extended to the Steel industry and if so in what form and to what extent. It is clear the question at what price steel can be produced in India given reasonably efficient management is an absolutely vital fact in that enquiry and therefore, of course, it is a matter that requires to be fully investigated. The Board entirely accept all that the Fiscal Commission said on the importance of publicity and it will be throughout their enquiry their policy to hold their examination of witnesses in public as far as they possibly can. At the same time they recognize that the decision in this case as to what statement can or cannot be made in public rests entirely with the Tata Iron and Steel Company. Of course the Board has no coercive powers of any kind and it is for the Company to decide what they will say in public and what they will not say. But there is this to be considered. In the last resort if the Board were unable to publish important facts which had been elicited in the private examination of witnesses, it might materially affect both their recommendations to the Government of India as also the final decision of the Government of India and of the Legislature. At that stage at any rate it would be very important that the interests asking for protection should consider this aspect of the case, because if facts cannot be made public it might be very difficult to use it at all. However, the Board have noted what you said as to the possibility that after to-day's proceedings have been recorded, if held in private, the Directors might possibly agree to their publication, if not at once, then at some subsequent stage. If they did agree that would be very much to the satisfaction of the Board. Meanwhile, in accordance with the wishes of the Tata Iron and Steel Company the Board will proceed with the examination of the witnesses to-day in private.

Mr. Peterson.—The Fiscal Commission stated that they did not necessarily mean that the entire enquiry should be held in public. I think that shows that they contemplated that enquiries into costs or the financial position of individual concerns would have to be treated confidentially.

President.—That is quite true. But you will understand that we are not raising any objection; nor are we criticising in any way the attitude of the Tata Iron and Steel Company. It is your business to decide what you can or cannot disclose. But we considered it necessary to draw your attention to the fact that statements that cannot be fully divulged in public might be difficult to use as the basis of our recommendations.

Mr. Peterson.—I think ultimately there will probably be no objection to the publication of the figures, but a certain time must elapse before we can make them public. For example there would be no objection to giving the figures for 1917 because they cannot possibly affect our present position. It is to-day's actual figures as to the cost and practice of production that we are apprehensive of publishing.

Mr. Ginwala.—If we make any recommendations we have got to substantiate them by facts. These recommendations will go to the Government of India, who will consider whether they are substantiated by facts and figures and whether our recommendations are justified before they are placed before the legislature. There is no guarantee now they will not insist on knowing.

Mr. Peterson.—I think you will find when we proceed with the examination that you can publish most of the essential figures without disclosing those we do not wish to be made public.

President.—We can leave it at that and proceed with the examination in private.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. T. W. TUTWILER, recorded at Jamshedpur on the 23rd August 1923.

President.—I should now like to take up as the basis of the question, the statement * which you were good enough to prepare and which summarises for three years the three stages by which pig iron is converted into rails, namely, Ingots, Blooms and Rails. Beginning with the first item, pig and scrap, I understand the scrap that is used is entirely the scrap which you produce in your own works.

Mr. Tutwiler.—Yes. The majority. We only buy scrap when it is cheaper than pig iron.

President.—When you use your own scrap in the manufacture of steel, you value it at Rs. 20 a ton. Is that a purely arbitrary value?

Mr. Tutwiler.—Yes. In some countries the value of scrap is higher than the value of pig iron. That was the case in this country and when we were producing pig iron for Rs. 25 a ton scrap was selling at Rs. 100 a ton.

President.—Is there at present a market in India for scrap?

Mr. Tutwiler.—I cannot say just what it is to-day.

President.—Taking it for a period of years?

Mr. Tutwiler.—Before the war there was not a large market but during the war there was a market. I know that the price of scrap until, say, within the last year was about twice as high as pig iron. We can sell our scrap iron for Rs. 75 a ton, we can get more for scrap steel.

President.—So that putting your cost at Rs. 20 a ton is a very moderate figure?

Mr. Tutwiler.—About a third of what it should be.

President.—It appears from the table you have given us that the cost of pig and scrap required for making a ton of steel rails rose from 29 to Rs. 47 between 1916-17 and 1921-22 and in 1922-23 there was a further rise to Rs. 55 a ton. Was there any special reason for the last rise of Rs. 8?

Mr. Tutwiler.—The rise is the price of coal. The cost of coal was in 1911-12 delivered at our Works at Rs. 2 a ton.

1912-13 cost was Rs. 3-2 a ton.
1913-14 cost was Rs. 3-14 a ton.
1914-15 cost was Rs. 3-13 a ton.
1915-16 cost was Rs. 3-13 a ton.
1916-17 cost was roughly at Rs. 3-8 a ton.
1917-18 cost went up to Rs. 5 a ton.
1918-19 cost went up to Rs. 5 a ton.
1920-21 cost went up to Rs. 7 a ton.

President.—What was the price in the last two years?

Mr. Tutwiler:—

1921-22 cost was Rs. 8 a ton.
1922-23 cost was Rs. 8-15 a ton or, say, Rs. 9,

and last year it was Rs. 9-2 a ton.

---

* *Vide* Statement No. XII.

Now, this is one of the reasons for the rise in the cost of production. But of this cost of coal 40 per cent. represents the cost of coal which comes from our own mines, and that is to-day about Rs. 4 a ton less than we have to pay for coal on our long term contracts which were based on the price paid by the Mining Engineer of the Railway Board.

Mr. Ginwala.—How does the average price work out?

Mr. Tutwiler.—That works out at Rs. 9-2 a ton.

President.—I think you made some statement as to the proportion of coal you get from your own collieries and the quantity you buy?

Mr. Tutwiler.—About 40 per cent. to-day from our own collieries, but it will be about 50 to 60 per cent. after the extensions are in operation.

President.—In these costing figures do you value the coal from your own collieries at actual cost of production without allowing for profit?

Mr. Tutwiler.—Yes. We take what it actually costs us to raise.

President.—That is Rs. 4 less than what it costs you to buy?

Mr. Tutwiler.—Our cost to-day works out, not including depreciation, interest, etc., to an average of about Rs. 6 a ton, that is at the collieries. You have to pay Rs. 1-5 freight on it. Our bought coal this year will cost us Rs. 9-4 which is the price paid by the Mining Engineer, to which we have to add 0-8-0 making the cost Rs. 9-12 at the collieries, and our freight rates average Rs. 1-5 and that has to be added. That is to say we have to pay about Rs. 3-12 more.

President.—In bringing the coal from your own collieries into the costing account does it eventually get its share of interest and depreciation?

Mr. Peterson.—This is all included in the general depreciation fund.

President.—Any question of profit on your coal mines is not taken at this stage?

Mr. Tutwiler.—No. Only the actual raising cost.

President.—Coming on to the next item—Feeding materials—I notice there is comparatively a small increase in 1921-22 but there is a big drop in 1922-23. Is that an item which fluctuates from year to year?

Mr. Tutwiler.—Yes. Gas is a big factor in making steel. You all know there was a time when anything that was black could be shipped and our consumption of gas coal went up from 900 lbs. to a ton of steel ingots to 1,200 lbs.

President.—Does it come under the head " Feeding material "?

Mr. Tutwiler.—It would not exactly be considered as feeding material as in the case of limestone, etc., but it certainly affects our production more than anything else.

Mr. Mather.—You have got that on your Gas Producers.

President.—This item " Feeding material " appears in the statement which the Company originally placed before the Board in their printed representation.

Mr. Tutwiler.—As I understand your question we are talking of the cost of ingots, and this item must go into the cost of ingots.

President.—The last statement* sent in shewing the cost of rail mill products summarizes the three stages.

Mr. Tutwiler.—We have to go through each stage. We have to take materials at each stage as we go through and explain the difference.

Mr. Peterson.—The difficulty here will be that " Feeding material " will include the three different stages.

President.—There is no item of " Feeding materials " in either Blooms or Rails. It comes solely under ingots.

---

* Statement No. XII.

Mr. Mather.—Feeding materials are dolomite, limestone, manganese, etc.

President.—If you look at this statement you will see that the cost of this item was 5·8 in 1916-17, 6·4 in 1921-22 and then there was a drop to 4·15 in 1922-23. All I asked was whether this is an item the cost of which fluctuates a good deal from year to year?

Mr. Tutwiler.—Of course the feeding materials will always be considered along with labour and that has fluctuated considerably; also the quality has made it necessary for us to use more in some years than we use in other years.

President.—That is rather a big fluctuation. It drops from 6½ to Rs. 4¼?

Mr. Tutwiler.—The only explanation I can give for it is this that our practice must have improved, that is, we get more heats per furnace due to an improvement not in coal only, but also dolomite and other materials. The only way I can explain offhand now is better practice.

President.—The next item is labour, which includes the labour employed in converting pig into ingots, ingots into blooms, and blooms into rails, but not the labour employed in other processes, *e.g.*,—the production of coal or coke or pig.

Mr. Tutwiler.—Do you mean labour to convert pig iron and scrap into rail?

President.—In the letter to the Government of India the Company sent in 1922 it said "Labour has increased by over 50 per cent. We are endeavouring, as the Government of India are aware, to reduce wages at our Works but we are faced here with the same problem that to-day meets all Indian manufacturers and the process must be gradual. Labour is not organized or educated in this country. We believe that it will be admitted by Government that the wages paid by the Railways are at present too high, but that it is impossible to reduce them except slowly and by gradual degrees because any such proposal would involve an immediate strike. We are in the same position as railways but they are not subjected to foreign competition." Well, looking at the figure here,* producing labour is Rs. 14 per ton in 1916-17; nearly Rs. 18 in 1921-22 and Rs. 17 in 1922-23. The percentage of increase over 1916-17 was 27 in 1921-22. The percentage of increase over 1916-17 was only 21 in 1922-23. *Prima facie*, it does not look as if labour charges were responsible to any great extent for increase in conversion cost. The conversion cost of a ton of steel went up by 65 per cent. and the cost of labour only by 21 per cent. so that it does not appear at first sight that the increase in the wages of labour can be regarded as one of the most important factors in raising the cost of production.

Mr. Tutwiler.—Production has increased and the labour has become more efficient.

Mr. Peterson.—The statement in the letter is a statement of the actual increases granted to our labour as the result of the war.

President.—The figures the Board have are for the years from 1916-17 to 1922-23 and I can only compare the figures of these years.

Mr. Tutwiler.—The increase in the cost of steel is 69 per cent.

In that 69 per cent. is included the increase for stores and labour. In this particular case the increase may have been small because the practice may have improved.

President.—All that proves that there has been a comparatively small increase in this particular class of labour. But still so far as it goes it does indicate that at any rate in the conversion processes, increase in labour costs has not counted for very much. But perhaps we can most conveniently discuss the question of cost of labour in connection with another statement. You have given us a statement† showing year by year for several departments your production in tons, the number of covenanted employees and their total wages and bonus, the number of uncovenanted employees and their total wages, and finally the total cost of labour.

---

* *Vide* Statement No. XII.

† *Vide* Statement No. I.

Mr. Tutwiler.—That statement was prepared with reference to Mr. Ginwala's question. The labour per ton of production has not increased but the actual cost of wages has.

President.—I would draw attention to the facts appearing in the statement * beginning first with coke ovens. The two years I am taking are 1916-17 and 1921-22—if you take the year 1916-17 and divide the wages of the uncovenanted employees by the number who were employed the average wages work out to Rs. 201, whereas in 1921-22 the average wage was Rs. 225, an increase of roughly 27 per cent. If now you divide the production in tons by the number of uncovenanted employees; it appears that in 1916-17, 243 tons were produced per man employed and in 1921-22 only 153 tons per man. That is surely a very considerable change. Let me put it in another way. Your production has increased from 230,000 tons to 360,000 tons, *i.e.*, by 56 per cent. but the number of employees has risen from 950 to 2,353, *i.e.*, by 145 per cent.

Mr. Tutwiler.—We are building three batteries of coke ovens and were running only one in 1922-23 but we have to run coal crushing machinery which was built to take care of all 3 batteries. In addition to that it will take very little labour to make 1,500 tons a day than it takes now for 500 tons. We shall be handicapped until we get the whole plant completed. By the 1st January 1925 production in this Department should increase from 359,923 tons in 1921-22 to 800,000 tons annually. That is when the whole plant is working, the production per man will be more.

President.—That is my point. I am trying to ascertain whether the incidence per ton of the labour charges is likely to fall as compared with the present figure. I will go on to the next stage—the blast furnaces. As nearly as I can make out the average wage has risen from Rs. 207 in 1916-17 to Rs. 272 in 1921-22 that is an increase of about 31 per cent. But here again dividing the production by the number of employees the number of tons produced per man has dropped from 184 to 123. Here again I think you anticipate a very considerable drop in the labour charges.

Mr. Tutwiler.—I have said so in the note. †

President.—Then we come to the open hearth. According to these figures the average wage of an uncovenanted employee was Rs. 250 in 1916-17 and it dropped to 240 in 1921-22. There was an actual reduction in the wages paid per man. I am simply dividing the total wages of the uncovenanted labour by the number of men employed. I am not taking the year 1922-23 into account as there was strike in that year. On the other hand the production per man dropped from 134 tons in 1916-17 to 76 tons in 1921-22. It seems a big drop. I am simply taking the figures from the statement and it comes to this that you had to employ 80 per cent. more men per ton of steel. I shall be glad if you will give the reasons for this.

Mr. Tutwiler.—I may say that our materials coal and feeding materials decreased in quality during these years. We had to use 300 lbs. more coal per ton of ingot and coal rose from Rs. 4-12 a ton to Rs. 8-11. If our coal deteriorates in quality we cannot get the same production as we would get with better coal. That means more feeding materials.

President.—It will have to be shown how this affects the outturn per man employed in the open hearth department. The immediate question is that you are not getting the same result from the work done by one man.

Mr. Tutwiler.—In 1916-17 we produced 139,000 tons of steel and in 1921-22 we produced 182,000 tons of steel. I do not know what was the tonnage in 1916-17 per man.

---

* *Vide* Statement No. I.

† *Ibid.*

President.—184. That is simply dividing the figure in column 2 (139,433) by the number of employees covenanted and uncovenanted.

Mr. Tutwiler.—1916-17 was a war year and this can be borne out by the Technical Adviser. We were allowed pretty elastic limits because we could not supply the demand and we were able on account of the wider specifications to make a larger tonnage. But when we were brought back to the rigid specification then the tonnage fell off.

President.—Owing to the larger number of rejections?

Mr. Tutwiler.—At the time we were being pushed for steel and what we could not get according to specification we could put into something else. There was a large and wider limit given to us for light rails and things like that for Mesopotamia. We were allowed a great deal more leniency than we are allowed to-day. If you want to get at that you should compare us with other steel making countries and the tonnage per man there. Take the same type of furnaces and I do not think we will be very far behind them.

President.—The immediate question is to what extent the present cost of labour may be taken as representing the future cost of labour.

Mr. Tutwiler.—Cost of labour per ton of steel must come down as we produce more. But what the cost of increase in wages will be I do not know.

President.—There is no increase in wages per head in this department. It has fallen. The average wage earned by the uncovenanted employee in the open hearth was a little less in 1921-22 than in 1916-17. If you divide the total wages by the number of men employed you will get the average wage per man. In 1916-17 it was 250 and in 1921-22 it was 240, so that the increase in the labour charges does not come from any higher rate of wages being paid. It arises from the fact that you employ more men per ton to get your outturn. The figure for 1921-22 was 76 tons per man for the year. What I really want to ascertain is how far that figure is a reasonable one to take for the future or whether you hope to get a higher outturn per man in the future?

Mr. Tutwiler.—We hope to get a larger outturn not due to the larger number of labour but due to other processes which are coming into operation but the wage per man can be explained by the class of men employed then and the class of men employed now.

President.—One question I might ask. Do you get many rejections in the ingot stage?

Mr. Tutwiler.—We turn them down ourselves. If we tap steel not within the specification we put it back into the open hearth furnace as scrap.

President.—Has it occurred to any great extent?

Mr. Tutwiler.—It does not now occur so much as in the early days.

Mr. Mather.—May I offer an explanation. I think the great advantages to the company during the war were not so much the actual rejections either by the company or the Metallurgical Inspector as in this way: that when the company, as at present, has to make its steel within a fairly close limit of quality they aim at making a particular quality of steel at the open hearth. If they miss that through any mischance they find before removing it from the furnace out that in order to bring it back again to that quality they will have to put it in the open hearth again. That means that the average time is rather longer now than it would have been before, *i.e.*, the output per furnace is less not so much because of the rejections but because it takes longer on the average to get your steel accurately correct.

Mr. Tutwiler.—And that means more feeding materials, etc.

President.—That means also less outturn per man.

Mr. Tutwiler.—The longer you have to keep steel in the hearth the lower is the output per man. In 1921-22 we were only making two kinds of steel. Now we are making four so that the more kinds of steel we make the better chance we have of making better use of our furnaces and more tons per man.

President.—You anticipate that in two or three years you will get a substantially higher output per man at this stage?

Mr. Tutwiler.—Yes.

President.—In the case of the blooming mill I find the same feature. The outturn per man has dropped to some extent since 1916-17. But this stage is not so important.

Mr. Tutwiler.—I think that the explanation for the whole thing is that we have to make better steel than we were doing at that time.

President.—Do you think that explanation accounts for everything?

Mr. Tutwiler.—I think it will account for a great deal of it.

President.—Both in the blooming mill and the rolling mill the increase in the wages of uncovenanted labour is very small. In the former it has only risen from 518 to 596. In the latter from 385 to 402 in the five years.

Mr. Tutwiler.—There is another thing that ought to be considered. We are at the present time keeping more Indian labour than we will have to keep in the future, because we have to keep an excess number in training for operating the new units of the plant that are now coming into operation. For instance one new steel furnace has just come into operation. We brought out no covenanted employees and we put on men from the old plant to operate the other plant.

President.—Let me put it this way. At present you are employing more men than are strictly necessary for the actual production that you are getting in order to train them for the additional plant that is coming into operation.

Mr. Tutwiler.—Yes.

President.—I gather further that you expect that for some years to come you will have to continue to employ a larger staff than is necessary for the production you will be getting because the plant will only come into operation gradually and also because until the staff are trained you won't get the full outturn of the plant that is expected. As compared with the figures for 1921-22 you look forward to a gradual reduction of labour charges per ton of steel.

Mr. Tutwiler.—That means more tons per man.

President.—I think that perhaps at this stage there is one question that I might put to Mr. Peterson and it is this. (Addressing Mr. Peterson) you told us more than once that the railway disorganisation has raised your cost. I am not sure I have clearly understood how it operates.

Mr. Peterson.—It is chiefly in the cost of coal. We consider that the present high cost of coal is an artificial price caused largely by the shortage of wagons.

President.—Will you please explain how it tends to produce that result?

Mr. Tutwiler.—I think I can answer that. We require daily 2,000 tons of coal for coke at the present time. Owing to the railway's inability to handle the coal from the coalfields, as we need it we have to pick up 400 tons of coal out of our stock. We have to put labourers to load that coal, and to unload it again into stock when we get a surplus on any days beyond the daily requirements. We have got a certain stock of coal here and if the railway is not able to give us regular supplies for two or three days we have to go and pick up coal from stock. That costs us a good deal. In the same way dolomite, ore, etc.

President.—I think Mr. Peterson was referring to something different, namely, that the price in the open market of coal is raised by the fact that the railways cannot guarantee transport. Can you explain to me how it has that result?

Mr. Peterson.—The real difficulty is not to obtain the coal but to obtain wagons and in order to obtain wagons people are often willing to pay very high sums with the result that the price of the commodity has risen. But there is no actual shortage of coal: the difficulty is to get it from the mines.

Mr. Mather.—I take it that Mr. Peterson's point is very largely this: there is a certain demand for coal in India. That amount can be raised but cannot be handled by the railways. The effect is that the supply to the customer is not equal to the demand and people are willing to pay a higher price. The effect of the Railway disorganization is that the supply is small and therefore the price goes up.

Mr. Tutwiler.—This company would never have kept stocks of coal at the collieries had there been no difficulty in moving coal from the collieries by the Railways.

President.—The next item is "stores,"* but I think there is no question to be asked about that. Refractories, however, is an item that has risen pretty considerably. It has risen from Rs. 1·36 in 1916-17 to 3·91 in 1921-22. There was a drop again to 3·2 in 1922-23. What were the main causes leading to the increase?

Mr. Tutwiler.—A great deal of that was caused because we had to pay more for our silica bricks. This is an industry which is just beginning in this country, and the quality is not at present as good as it should be some day. We pay 30 per cent. more to-day for our refractories in this country than other countries do, but we hope also that that will come down as the practice improves. Then, again, we use more on account of lower tonnage per man.

President.—Let us go on to the next item 'Relining Fund.' Perhaps you can explain what your procedure is about the 'Relining Fund.' Do you make a fixed allotment every year for that purpose?

Mr. Tutwiler.—We figure month by month what our actual cost is, and then average it for the whole year.

President.—Both in 1921-22 and 1922-23 there was a round sum of Rs. 7-8 entered in the costing accounts. Is the procedure this that you allot so much per year and put it aside for this purpose and keep a *pro forma* account debiting to this fund what it actually costs you to reline?

Mr. Tutwiler.—We take the basis of 12 months and see what it has cost us.

President.—That is to say, Rs. 7-8 is an average figure?

Mr. Tutwiler.—It varies.

President.—It has been exactly Rs. 7-8 two years in succession. That is why I imagine it must be an average figure. Would you look to your pamphlet at page 77 and the statement which you sent to the Government of India?

Mr. Peterson.—In the pamphlet it is 7·5.

President.—It is only the procedure that I am trying to get at. In the case of this item you take the average figure and set it aside.

Mr. Tutwiler.—It is based on actual cost of the 12 months preceding. It will be varying.

President.—The next item is 'Gas Producers' and this is of course one of those items which has gone up very distinctly. It has gone up, as a matter of fact, by 145 per cent. I take it that the main reasons for the increase are increase in the price of coal and deterioration in the quality of coal.

Mr. Tutwiler.—And tonnage per man, that is lower outturn per furnace. If the coal is inferior in quality it will mean longer time for the furnace.

President.—Would the same apply to steam which has also gone up very much?

Mr. Tutwiler.—Yes, the same consideration applies.

---

* *Vide* Statement No. XII.

President.—The next item is "Service expenses." We mentioned that at an earlier meeting and I think the statement was then made that that head included town expenditure. Do the Company adhere to that statement?

Mr. Peterson.—Yes, I said so, but now find it does not include any expenditure on the town. As a matter of fact the expenditure on the town has not been shown in the cost at all. It should have been shown.

President.—I should like to know the sub-heads. I do not think we got it down very clearly, when the subject came up before, what expenditure was covered by the term service expenses.

Mr. Tutwiler.—Yard switching, laboratory expense, general works expenditure, Contingent fund and leave pay.

Mr. Ginwala.—Electric lights in the Works and the town are also included?

Mr. Tutwiler.—The lights in the Works are included but not those in the town.

President.—Town expenditure, I understand, is not charged at all in the costing account. I now want to go on to the last items "Interest, depreciation, Bombay expenses, etc." The interest as shown here is simply the interest that is debitable to the conversion processes, and it does not include the share of interest allotted to the pig iron and coke process. I find that between 1916-17 and 1921-22, the interest charge per ton has gone up by 523 per cent. which is a substantial increase. Could you give us the actual sum distributed under this sub-head in the costing accounts for 1921-22?

Mr. Peterson.—I can give you that. Interest is based on the actual figure paid. In the year 1922-23 the interest actually paid by the Company was Rs. 34·77 lakhs. For the purposes of the costs laid before the Tariff Board we have taken the figure at Rs. 30 lakhs.

It is impossible to compare this with 1916-17 because at that time the Company possessed reserves which it employed in its own business and on which it did not have to pay interest. It was actually depositing money with Banks. That money has now been used for the extensions and the Company has to borrow such moneys as it needs for working capital. The figure can therefore only be compared with what might be described as the ideal standard. A comparison of the increase, if any could be made would come under two heads:—

(1) The need for increased working capital.

(2) The increased rate of interest which has to be paid to obtain this.

The increased rate of interest is a matter of common knowledge. In 1916-17 the rate paid by the Company was from 5 to 5½ per cent. It is now 7 to 8 per cent. This disposes of the second point.

As to the first, the actual stores of coal, raw material, and finished products and of spares required for the Works have increased both in quantity and price. In 1916-17 the stores, spares, etc., were valued at Rs. 53 lakhs. They are to-day worth over 160 lakhs. The same increase has occurred in the outstandings and for the same reason. The prices of all finished products have risen and with the larger production larger stocks have to be held. As more and more units of the new plant come into operation we have to allow for increased working capital a considerable period ahead. We cannot expect to obtain the money needed to hold the increased stocks at the moment when we require it. We must already have it in hand if we are to operate the new plant at all. We have to develop our ore mines, our quarries and our collieries to give the increased quantities. We have to engage staff ahead and bring them to this country.

The question then seems to be what is a reasonable working capital for a plant of this size. We cannot we think do better than give the Tariff Board the figure which we ourselves use for this purpose and on which we have based our financial programme for the new and extended plant. We expect the plant to be in full operation within six months so far as steel and iron production are concerned and we must make the provision now. Our estimate of the total capital invested in these Works when all new construction at present in hand is completed is Rs. 22 crores. Our estimate of the total working capital that will be required in addition is Rs. 5 crores. At 7½ per cent. the total interest charge on working capital which we have allowed for is therefore Rs. 37·5 lakhs and that may be taken as our final interest charge to be shown in our costs for some years. The figures given in our representation are for 1922-23. For that year we have actually paid in interest charges Rs. 34·77 lakhs. We consider that in view of the nearness of full operations and the plant now working, a fair estimate of the working capital required for that year will be Rs. 4 crores approximately, which, at 7½ per cent. would mean Rs. 30 lakhs and that is the figure we have taken.

If it is desired to ascertain what this represents per ton of steel, probably the simplest way of doing this will be to disregard all products except pig iron and steel. We also sell Sulphate of Ammonia, coal tar, etc., but our sales of these are small in comparison. The production of these products for last year may be taken at 140,000 tons of steel and 110,000 tons of pig iron for sale. On this the Rs. 30 lakhs for interest has to be allocated. It can be allocated in one of two ways, either according to the selling price which we obtained or according to the actual manufacturing cost to us, what we call the works cost. Both methods yield a somewhat similar result.

The selling price of steel during the year was Rs. 150 and of pig Rs. 60. The calculation here is the tonnage 140 multiplied by the price per ton 150, *i.e.*, Rs. 2·10 crores for steel and 110 multiplied by 60 or Rs. 66 lakhs for pig. The relation is 3·2 to 1 and the allocation of the Rs. 30 lakhs gives 22·9 lakhs on steel. On 140,000 tons of steel this gives Rs. 16·3 per ton. The Works cost of steel was roughly Rs. 120 and of pig iron Rs. 40. These are approximate figures taken for ease of calculation. The calculation is 140×120, *i.e.*, Rs. 1·68 crores for steel and 110×40 or Rs. 44 lakhs for pig iron and the relation is roughly 4 to 1. Allocating the Rs. 30 lakhs in that proportion the charge to steel is Rs. 24 lakhs which gives on 140,000 tons a charge of Rs. 17·2 per ton. We know no more accurate way of allocating these charges.

President.—Then could you give me the figure for the total interest in your costing account for 1921-22?

Mr. Peterson.—

	Rs.
1921-22	25,49,000
1920-21	23,21,000

सत्यमेव जयते

President.—I don't think we need proceed further back. The point I wish you to consider is this. I quite admit that you have got your extensions into operation. That means that you may require to make financial arrangements for a much larger working capital than would be necessary if there were no such extensions coming into operation. My point of view is different from the Company's point of view. What the Tariff Board strive to consider is what would be the fair charge per ton of steel in future. They have to consider what the position will be when the extensions come into operation. I think in 1921-22 the extensions had not begun to come into operation.

Mr. Peterson.—The Batelle blast-furnace and certain other items were actually in operation. I will submit a statement.*

President.—Taking your Balance† Sheet as on 31st March 1922 I take it that the working capital would be represented by stock and stores, book debts, advance and cash. That leaves the fixed capital expenditure and investments.

Mr. Peterson.—That will be correct on the date but might not necessarily be correct on any other date in that year.

---

* *Vide* Statement No. XIII.

† *Vide* Annual Report of the Company.

President.—Are there any special reasons?

Mr. Peterson.—It would depend very much on how the money came in, *i.e.*, realizations from sales.

President.—Taking this figure for the moment it comes roughly to something like Rs. 290 lakhs.

Mr. Peterson.—For the old original plant we should consider that rather a high working capital.

President.—Then you will notice it includes Rs. 66 lakhs on stocks and stores for the greater extensions and that would hardly be a fair charge on the old plant, so that it would come down to about Rs. 2¼ crores. The interest on 2 crores will be Rs. 15 lakhs. But the debit that you have made in that year in your costing account is Rs. 25,45,000. I want to know what the figure was for 1921-22.

Mr. Peterson.—At that time we did not calculate the figure. This system of keeping the cash accounts by allocating the overhead charges on interest and depreciation and including them has not been in force for more than two or three years.

President.—I am asking for 1921-22.

Mr. Peterson.—We were doubtful at any rate when we instituted it and did not know exactly how it should be allocated. In that particular year we charged Rs. 4 lakhs for the greater extensions as interest.

President.—You have given certain figures for interest in your printed statements. The figures for 1921-22 were in an annexure to your letter to the Government of India.

Mr. Peterson.—I don't know where you are getting the interest charge for 1921-22 from?

President.—In those statements* for 1921-22 you have given an interest figure under pig iron, under the open hearth furnace, under the blooming mill and under the rail mill.

Mr. Peterson.—You want to know what the total figure was.

President.—The point I am putting to you is that if your working capital is only 2 crores and the rate of interest charged is only 7½ per cent. it will come to 15 lakhs. This is the sum which should have been distributed. You are overcharging, so to speak, that part of this interest.

Mr. Peterson.—In giving the figure in the letter to the Government of India we took the interest actually paid.

President.—That I understand. In answer to a question put on the second day's proceeding you said that the distribution of cost was what you actually had to pay and did not include anything except cash credits, debentures, deposits, etc. My point is that from this very source you have a larger sum at your disposal than you require as your working capital for the old plant.

Mr. Peterson.—That may have been so in 1921-22.

President.—Would not that be also in 1922-23. From our point of view we are looking to what the fair charge from year to year for interest should be.

Mr. Peterson.—I think what we have given is a fair estimate.

President.—That of course will be distributed over a much larger production. We may take it then that Rs. 17·02 per ton is an abnormally high figure.

Mr. Peterson.—That figure will ultimately come down.

President.—I understand that the depreciation and the Bombay charges are distributed in your costing account in the same way as interest charges?

Mr. Peterson.—Precisely in the same proportion.

---

* *Vide* statements appended to the company's letter to the Government of India, No. G—1460-22, dated the 17th/23rd October 1922.

President.—When I asked you about depreciation I think you said that you arrived at the total amount to be taken into account as depreciation by a simple consideration of what you thought to be a fair figure in all the circumstances. But I understand you may possibly wish to revise that answer.

Mr. Peterson.—The actual figure taken is the depreciation allowed by the Collector of Income Tax according to the rates fixed by the Government of Bombay. The only point on which this is an estimate is the actual block in operation on which this should be taken.

President.—Then it is the income tax rate that is used as the percentage. In this comparative statement* of the three years there is a very big jump between 1921-22 and 1922-23. This item includes Bombay charges but I don't think they vary much. It rose from 22·7 to Rs. 30 per ton which is a big jump in one year.

Mr. Peterson.—A good deal of our extra plant came into operation during that year.

President.—A good deal of extra plant came into operation in the year but nothing like full operation?

Mr. Peterson.—There is a good deal which is not visible here. In the last year one new blast furnace and two batteries of coke ovens came into operation. The figure has gone up by 5 lakhs.

President.—May I have the actual figure for depreciation?

Mr. Peterson.—

	Rs.
1920-21	35 lakhs.
1921-22	40 ,,
1922-23	45 ,,
This year	55 ,,

President.—The Income tax rates for depreciation are 7½ per cent. for machinery and 2½ per cent. for buildings.

Mr. Peterson.—Machinery and plant 10½ per cent., electric light 7½ per cent., sanitary works 5 per cent., on works buildings 5 per cent., on town buildings 2½ per cent.

President.—Roughly how does it work up to?

Mr. Peterson.—Taking the figures for 1922-23 on the 31st March 1922 the total block on which depreciation is taken is 6·34 crores and according to the rates taken by the Income tax Collector it will be 45·12 lakhs.

President.—There was another question that came up on a previous day, namely, as to what would be the fair rate of profit to the Company. You told us that it should be so fixed that the Company will have 10 per cent. on the capital at least.

Mr. Peterson.—What I meant to say was that as a general principle any commercial enterprise should earn 10 per cent. on the money actually spent as fixed capital expenditure if it is to be reasonably successful. If you spend 5 lakhs on an industrial concern you would expect to make Rs. 50,000 annually net out of it on an average.

President.—I am not going on that basis for the moment. I take it your fixed capital expenditure on the asset side of your balance sheet must be taken as representing the sum which has actually been invested in the business. Investments presumably will earn their own profits. The total fixed capital expenditure comes to Rs. 16·49 crores. Your share capital called up comes to 9·12 crores. As against the fixed capital expenditure it is necessary to take into account also the premium on deferred shares, the depreciation and reserve fund. There may be one or two other small items. The inclusion of the depreciation fund on the liabilities side of the balance sheet has the effect ultimately of increasing your fixed capital expenditure by that amount. I think I am right in saying that the ordinary English practice is that when a sum is written off as depreciation it does not appear on either side of the balance sheet.

---

* *Vide* Statement No. XII.

Mr. Peterson.—I do not know what the English practice is. This is the way in which we have shown it.

President.—My point is that under your system sums allotted for depreciation appear in the balance sheet as fixed capital expenditure, which in your view is the amount on which you are entitled to profit. If, however, the sums written off are for depreciation in the ordinary sense then before you attempt to ascertain what is the sum on which you are entitled to earn a profit they must be deducted from the fixed capital expenditure.

Mr. Peterson.—My view is that money actually spent should earn 10 per cent. net. Very possibly money invested may come from depreciation or reserves, *i.e.*, surplus profits, but in reckoning that 10 per cent. I would take the money originally spent whatever the source from which it came.

President.—If you charge depreciation in the costing account and also allow profit on the sums so set aside, you are making allowance twice for the same amount.

Mr. Peterson.—Suppose a man invests Rs. 1,000 in industry instead of in Government securities. Government securities will give him 6 to 7 per cent. without risk. I consider that he should get at least 3 per cent. more for taking the risk in industry. Even if the Rs. 1,000 depreciates I still consider that he should continue to receive 10 per cent. Unless an extra profit compensates this extra risk you will get no capital for industry. As a general proposition, this is in my opinion a very reasonable figure.

President.—May I put it in this way that it is recognised that in process of time your plant gradually loses in value until it reaches a stage when it will have to be renewed.

Mr. Peterson.—I think the investor should receive 10 per cent. exclusive of depreciation. If you put money in Government securities there is no depreciation of this kind.

President.—Supposing you start with a capital of Rs. 10 crores, all of which goes into the company's fixed capital expenditure, and supposing at the end of a certain number of years you have written off Rs. 2 crores as depreciation, if you actually use that money to buy additional plant at the end of that time is the capital on which you are to earn a profit 10 crores or 12 crores?

Mr. Peterson.—I should say Rs. 12 crores. If you want my opinion depreciation should earn profit. If the industry is to be successful it should receive 10 per cent. exclusive of depreciation.

President.—Can I take your opinion as being that of the company?

Mr. Peterson.—This is my personal opinion on the general question. If you ask what profit the company should make I should have to ask the shareholders.

President.—You have got a very small reserve fund and to my mind it is perfectly fair that you should earn profit on your reserve fund, that is, money set aside from profits for capital expenditure. Anything written off for depreciation is totally different. It means that you write off that amount in order to prevent your plant from appearing in your balance sheet at more than it is really worth.

Mr. Peterson.—We have taken 120 lakhs from the profits expressly for the greater extensions. It was not actual depreciation on the original plant. A certain portion of the profit was set aside for the capital required for the greater extensions. It was actually 1·17 crores. This is included in the figure shown under depreciation.

President.—If you deduct that from the Rs. 3 crores that reduces it to about 1·83 crores and the company has been operating for about 11 years, *i.e.*, about 18 lakhs a year. That will at once raise the question whether the amount written off as depreciation is sufficient.

Mr. Peterson.—We may not have taken as large depreciation as we might wish. We may not have been able to do so.

President.—That I fully understand. My point is that by your procedure of showing the depreciation fund on the liability side of the balance sheet with an equivalent increase in the fixed capital expenditure on the other side,—capital side, you tend to swell your capital account, *i.e.*, the sum shown as fixed capital expenditure in your balance sheet exceeds what your property is worth.

Mr. Peterson.—I should say it is less than what the property is worth. Much of the property has increased in value. The balance sheet shows the property at cost. Some of it has gone up in value, same has gone down. Take the collieries. Their value is not included in the balance sheet. It seems to me that these considerations do not apply to the balance sheet. The value may have increased or decreased.

President.—That is not the view generally taken, I think. We regard the question as extremely important.

Mr. Peterson.—The balance sheet contains the actual cost shown in our books which bears no relation to the present day value.

President.—On the assumption that the sums you have allotted for depreciation are reasonable your fixed capital should be taken at about Rs. 3 crores less than you have shown it.

Mr. Peterson.—If you say that I must contest that statement as in my opinion the property is worth not less but more.

President.—It may be, but there is no means of ascertaining. Perhaps we might leave it at that. But I think I ought to make it clear that you have not by any means succeeded in convincing me that your view is the correct one. I am, of course, ready to hear anything more you would like to say on the subject any other day, but my present view is that in taking into account the capital on which it is fair to earn a profit what is written off as depreciation must first be deducted.

Mr. Peterson.—I have already stated what an ordinary commercial undertaking should earn as profit. My opinion may be incorrect. I am not arguing the case on behalf of the company. It seems to me a general question on which there may be as many opinions as there are people. I think a commercial undertaking should earn a profit of at least 10 per cent. net on the actual money expended if you consider the rate of interest on Government securities.

President.—Including all sums allotted for depreciation?

Mr. Peterson.—It includes in the case of this plant money actually paid for the machinery, money actually paid on account of exchange, money paid to the Consulting Engineer, *i.e.*, the actual money expended.

President.—That is to say, that you do not consider that this sum ought to be reduced by what is allotted for depreciation.

Mr. Peterson.—It is only a general proposition. I should say that the return to the investor should be 10 per cent. exclusive of any sums that it might be necessary to set aside for depreciation.

Mr. Ginwala.—Suppose you borrow money on debentures at 5½ per cent. Would you expect 10 per cent. on it?

Mr. Peterson.—Debentures are a mortgage security and are usually only one-third of the value of the property mortgaged. Money expended on industrial enterprise should earn 10 per cent.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. T. W. TUTWILER recorded at Jamshedpur on the 24th August 1923.

President.—What proportion of your output of steel is according to the British specification and what proportion is below that? What class of steel competes with you?

Mr Tutwiler.—We only try to make British standard steel.

President.—Your aim is that the whole of your output should be British standard and anything that is below that is scrap?

Mr. Tutwiler.—British standard chemically but sometimes they are not so physicaly. They may not be quite true to section and we would not sell them as a first class article but sell them as bazar article.

President.—What proportion of your output you regard as able to compete with the British standard steel?

Mr. Tutwiler.—That means what practice we get.

Mr. Mather.—I think it means this. I have in my office the tonnage of steel that I accept as up to the British standard specification. I don't have any report of the steel which you do not put up as British standard specification. You have the total tonnage of all products and from that you deduct those which I accept and you get the quantity of steel which is not of the British standard.

Mr. Tutwiler.—Some Companies will also take our guarantee that it is British standard and when we guarantee that, it is accepted by customers as if it was passed by the Government Inspector. About 95 per cent. of our output is sold as British standard steel.

Mr. Mather.—I accept about 90 per cent., and the other 5 per cent. are accepted on the Company's guarantee.

President.—The next point is this. From the quotations in the British trade papers it appears that the present quotation is something like £5-5 or £5-7-6 for pig iron, and between £9-10 and £10 for steel rails. Assuming that the cost of producing steel rails is somewhere about £8, I take it that the cost of producing pig in England can hardly be below £4. On that basis the cost of steel rails is about double the cost of pig. According to your figures the cost of production of pig iron works out to about £3 and the cost of steel rails came to close on £11 in 1921-22 and to something over £12 in 1922-23. Apparently the cost of steel rails comes out at about four times the cost of pig iron. That is a very wide difference and the importance of it comes in this way. If eventually India is to be able to compete in the world's market—with steel producing countries like England and America—you have got a good long way to go, and there will have to be a heavy reduction in the cost of the stages by which pig iron is to be converted into finished steel. I should like very much to hear what you have to say on this point.

Mr. Tutwiler.—I have not got the actual English costs but I can explain our figures for 1915-1917 as compared with pre-war cost in America. I can give you the difference between pig iron and ingots and between ingots and rails in America, but I cannot give that between England and India. In your question you said that the price of pig iron in England now is £5-7 and the price of steel rails is £10. A billet is a semi-finished piece of steel and it is bringing practically the same price in America that the steel rails are bringing. I think the set price in America is 43 dollars for rails and for billets it is 42 dollars and a half or practically the same. So we may assume that these are of the same quality. In the years 1915 to 1917 the works cost of our ingots was about Rs. 42 a ton. In 1912-13 in the States the cost of ingots was Rs. 51 or 17 dollars. The cost of the mixture (pig iron and scrap) in America was Rs. 39 as against Rs. 20 in India: cost of conversion here was Rs. 22 against Rs. 12 in the States: in other words 4 dollars against Rs. 22. That makes the difference of Rs. 10 to be explained. We have to use 250 lbs. of limestone for a ton of steel against their practice of 200 lbs. per ton of steel. Our limestone cost us Rs. 6 a ton and theirs cost them Rs. 3-6 a ton. There was thus a difference per ton of steel in their cost and ours of 8 annas. The increased cost of calcining lime which we have to do here is 25 per cent. as against 5 per cent. and the excess consumption is due to excess acid in the raw stone in this country and then we also have to calcine with a coal of inferior quality at a higher cost. Our limestone also contains a less quantity of CaO. than it does in America, so that we have to spend 8 annas above them on this article. To eliminate this difference we have brought out rotary kilns and the fuel that we will use will be coke oven gas so that there will be no impurities put into the lime from the fuel and we ought to get down to their price. We hope to have these working by the beginning of next year. The next item we have is moulds and stools. Our cost per ton of steel is 12 annas and theirs was 5 annas—a difference of seven annas. They get about 100 heats per mould as against our 65. That is due to our not being able to obtain as good result in our foundry work as they are doing. We hope to get away from that by casting direct from the blast furnace as they do over there. We would have been able to do that long ago had it not been for the war. We used at that time 900 lbs. of coal per ton of steel against their 600. Our coal cost us Rs. 2-8 and theirs Rs. 2-4—a difference of only 4 annas a ton. Our labour cost us Rs. 4-2 a ton and it cost them Rs. 2—a difference of Rs. 2-2. I don't think that needs any explanation. That depends on the length of time our material was in the furnace. We also explain that by the covenanted labour which we have to bring here at high wages and then again we give a month's leave to all Indian labour.

President.—In the United States they would not get that? It really means that your labour is not permanently domiciled in Jamshedpur and they want to go home?

Mr. Tutwiler.—Yes, but it is gradually becoming domiciled. In 1915 we used to give the men this leave.

Mr. Peterson.—We confirmed that concession to labour and regularized it in 1920. It is really an increase in the wages of labour.

Mr. Tutwiler.—Men will not stick for 12 months as in the case of cold countries but the cost per ton of steel will decrease because the covenanted labour is decreasing now, and with the new Duplex furnaces coming into operation we will require two men per shift per furnace to make 500 tons of steel a day. We require now 6 covenanted men per day per furnace to make 100 tons of steel. We may make between 5 and 6 tons with the new process with the same number of men, and so our labour is likely to come down. Materials, repairs and maintenance cost us 11 annas a ton and it cost the States 5 annas a ton—a difference of 6 annas. That was on account of the higher price of material. We have to bring by sea most of the materials and that cost us more.

President.—In this particular item you have got a permanent disadvantage?

Mr. Tutwiler.—Yes. The same thing applies to tools, lubricants and other miscellaneous supplies 12 annas a ton disadvantage.

President.—Do you regard it as a permanent disadvantage?

Mr. Tutwiler.—I do not regard that as a permanent thing. With the bigger output that will also decrease.

Under "refractories" our cost was 14 annas and theirs 10 annas, a difference of 4 annas. It is due to the materials not being up to the quality. Raw materials are of good quality and we hope to improve the quality of the article as we go along. Then in things like water we were a little better off than they are by one anna. In electric light and power and yard switching we are a little better off, but in the matter of laboratory, establishment expense and general working expense we are worse off. Then we have a contingent fund which they do not carry.

President.—What is the contingent fund exactly?

Mr. Peterson.—The contingent fund is meant to provide for leave for covenanted labour. Our contracts provide that covenanted men should get one month's leave in the year. If they do not avail themselves of the leave for three years at the close of the contract they get 3 months' pay.

Mr. Tutwiler.—Then we have to pay their passages home.

Then we have what we call ordinary furnace repairs, etc. It cost us Rs. 4-12 per ton of steel and it cost them Re. 1-8. We are not getting as good practice as they get.

President.—To what do you attribute this?

Mr. Tutwiler.—We attribute this primarily to climatic condition. In other countries a man stands up with his face right up to the furnace all the year round but here they cannot stand it for more than 7 months. For the other four months it is absolutely impossible for him to do it. We can get away from that by improvements in furnace construction, *e.g.*, the water cooling process.

President.—Still the climate is a permanent disadvantage or can you get out of it by water cooling process, etc.?

Mr. Tutwiler.—Ours is a new industry and it requires time before we come to the improved practice. We might be a little worse off at present but we hope to improve as time goes on.

The total increase in the spread is Rs. 10 and Rs. 8-1 or 95 per cent. of it has been explained by me. But the high cost of labour, as I explained, which is Re. 1-8 a ton is due to the higher wages paid to the covenanted labour. The excess amount in refractories and flux is due to quality of stores and materials, as well as to the fact that they were not used as efficiently as they are in other countries, and also to the cost per ton of repairing the furnaces, etc. Then, we have a higher loss than they do in other countries because we carry a higher slag volume which is necessary on account of the inferior flux and the inferior furnace practice. That explains the difference of Rs. 10

Mr. Ginwala.—How did you get the cost of production in the United States?

Mr. Tutwiler.—I got it from private sources but I think it is fairly accurate.

Mr. Ginwala.—Is it one year's cost or the average cost.

Mr. Tutwiler.—Theirs is one year's cost; mine is for 1915-16 and 1917.

Mr. Kale.—What additions must have taken place in these costs?

Mr. Tutwiler.—Labour a good percentage in England. It has also gone up in America.

Mr. Kale.—How will this cost compare with the present cost?

Mr. Tutwiler.—In America I can only judge by rail. In America they have always a set price for rail. The price for a number of years was 28 dollars; then they rose during the war, but now they are 43 dollars, and their selling price for rails is usually about 5 dollars above cost.

President.—It seems likely that the spread must have increased a good deal since 1916-17 in your cost, but the prices prevailing at present do not suggest that the American spread has increased so much.

Mr. Tutwiler.—I don't know. Our present day cost of ingots is Rs. 78 and of pig iron Rs. 38 a ton.

President.—The inclusion of interest, depreciation and so on may affect materially the cost according to your figures.

Mr. Peterson.—I think Mr. Tutwiler can give you an explanation for the increase in the spread in our cost.

Mr. Tutwiler.—I can give you these costs for 1921 as compared with 1915-17. In 1921 ingots cost us Rs. 70 as against Rs. 42 in 1915-17. The cost of our mixture in 1921 was Rs. 32 as against Rs. 21 in 1917. Our cost of conversion in 1921 was Rs. 38 as against Rs. 22 in 1917. In 1921 we used 400 lbs. of limestone at Rs. 6-9 per ton against 250 lbs. at Rs. 6 in 1917. The percentage of pig iron was 75 to 80 per cent. against 65 to 70 per cent. The more pig iron you charge the more lime you have to use. The quality of the stone was not as good and in 1917 our coke contained 20 per cent. ash and it 1921 25 per cent. ash, so we had to use more coke in calcining limestone of poorer quality, and the more calcining we had to do the more labour we had to use. Our moulds and stools, quite a big item, cost us Re. 1-4 in 1921 as against 12 annas in 1917.

Mr. Mather.—That was mainly due on account of increased cost of pig. Perhaps I may be allowed to remark that as Mr. Tutwiler has already pointed out, the life of the ingot mould is not so great as it is in America and I do not think it is likely it will ever reach such a life as in America. It is obviously uneconomical to import pig iron into India, but ingots and the pig iron in other countries with lower contents of phosphorus gives moulds having a longer life than those made from Indian iron. On the other hand the cost of pig iron is lower here and this will give India an advantage which may be enough to offset the drawback.

Mr. Tutwiler.—Moulds cost us Re. 1-4 in 1921 and 12 annas in 1917 and this was mainly due to the increased cost of pig iron. Fuel rose from Rs. 2-8-0 to Rs. 6 due to increased price of coal. Labour went up from Rs. 4-2-0 to Rs. 6 due to increase in wages and less tonnage per man. Materials, repairs and maintenance increased by five annas due to increased cost of pig iron from which castings are made. Tools, lubricants and miscellaneous things—on account of increased consumption and increased price varying from 200 to 400, *i.e.*, averaging about 250 per cent. more in 1921 than in 1917. Refractories went up from 14 annas to Rs. 3 on account of the higher consumption of dolomite, magnesite and calcining lime with inferior coal. Our dolomite cost us Rs. 5 a ton in 1921 against Rs. 3-8-0 in 1917. Magnesite cost us Rs. 90 a ton in 1921 as against Rs. 75 a ton in 1917.

President.—The point I would like to suggest is that in most respects during the last six years progress has been retrograde. The quality of your materials has fallen off, and also the efficiency of your labour as judged by the output per man.

Mr. Tutwiler.—I think that is a very unfair criticism.

President.—I do not put forward that as my criticism but as an inference suggested by what you have told us. It is for you to comment on it.

Mr. Tutwiler.—My explanation is that when the war broke out we had in this country four small open hearth furnaces, we had two mills and one engine. We were asked by Government to do everything we could to increase our output. We could not get any spare parts and we had to manage with what we had. But we built during that time three steel furnaces and erected another engine to run the blooming mill. We know that our plant was abused during that period. We are now just recovering from that.

President.—That is to say any lack of efficiency in the running of your plant was due in part to the way in which it was run during the war.

Mr. Tutwiler.—Also due to the increase in the cost of raw materials and labour which not only affects our costs here but also affects the cost of our raw materials.

Mr. Peterson.—There was strict supervision of the coal supplied to us before the war. During the war and after it the quality of the material was much inferior.

President.—There has been in the last six years a deterioration. Do you look forward to an improvement?

Mr. Peterson.—That was a mechanical deterioration very largely due to the fact that the coal was not properly screened and had to be held in stock and loaded several times as the Railways would not handle the traffic.

President.—Do you look forward to an improvement in the quality of the coal?

Mr. Tutwiler.—Yes as we are responsible for 50 to 60 per cent. of our own coal and we have spent about a crore of rupees for improving our coal. We have got the machinery which has just arrived and is being erected. We have electrified our collieries and they will begin to show results from October.

President.—Will this result in an improvement in the quality of your coal?

Mr. Tutwiler.—Yes. It is bound to improve. We are putting mechanical screens and things like that. But I do not think we shall come down to pre-war cost, nor do I think that any country will get back to the pre-war level. As long as the supply of coal was not sufficient to meet the demand not only this country but other countries suffered in the same way. Now the supply is more than the demand. Our coke now contains 22 per cent. ash as against 25 to 27 as has been the case for the past two years. That means we use 1,000 lbs. of dolomite as against 1,500 lbs. It also means that instead of using 3,300 lbs. of coke per ton of iron we use only 2,800 lbs.

President.—You also expect that you will get an improvement in things like dolomite, limestone, etc.

Mr. Tutwiler.—Yes. Another thing that has affected us in our raw materials, which is now being rectified, is the services. For instance when there was a big movement of freight on we had to take coal from our stocks because we were not able to get regular supplies here. If for instance the railways are unable to supply us with coal for 48 hours, we have to load from stock to the extent of 2,000 tons a day, coal which due to weathering deteriorates and is not of the same quality. But it is hoped that in one year at the outside they will be able to give us regular supplies.

President.—I understood you to say in the earlier part of the discussion that during the last three or four years dolomite and limestone were not of as good quality as it used to be.

Mr. Tutwiler.—That is also because of the difficulty of railway service. We had no time to pick and choose as we would do if we had a regular supply. We had to load it up and get it here to keep the plant going. But this I am sure will be rectified and indeed it is better to-day than it was six months ago.

Mr. Mather.— Has the average quality of your limestone and dolomite improved already?

Mr. Tutwiler.—Yes. We have brought down coke per ton of iron from 3,300 lbs. to 2,800 lbs. That shows a considerable decrease.

Mr. Ginwala.—Have you taken into account this important factor? As your production of steel as well as pig increases there will be a greater demand for all these materials and that may affect both the prices and the quality.

Mr. Tutwiler.—We have taken that into consideration by providing our own materials. Prior to going ahead with our scheme of extensions, we have acquired reserves of raw materials and so far as we are concerned, we can control the price and the quality.

Mr. Ginwala.—So long as your contracts subsist.

Mr. Tutwiler.—40 per cent. of our coal is contracted for and that coal is inspected by our representative or the Government representative. In our contracts we are provided against that by a clause which reads that all coal must be commercially free from shale, slate and other impurities. If we break our present contracts, we still have our own reserves of raw materials to carry on with.

Mr. Ginwala.—You presume that at present when there is no other steel industry but if on the other hand there is competition in the future and the total output of the country is doubled, will it affect your quality?

Mr. Tutwiler.—It won't affect quality because we are provided against that by our own supplies of coal.

Mr. Ginwala.—So far as you are concerned you will not be affected under any conditions.

Mr. Tutwiler.—No. We have plenty of reserves to make up deficiency.

Mr. Kale.—I should like that you should, if it is possible and convenient, summarise what you have been telling us with regard to the possible reductions of cost in the next few years, *i.e.*, how the present difference of Rs. 45 per ton is likely to be abridged in the course of the next few years on account of the improvement of which you have spoken.

Mr. Tutwiler.—I have already given that information. I do not want to be pinned down to that definite statement.

Mr. Kale.—What I want to know is how much reduction can be effected in the cost on account of the greater efficiency of the labour and on account of the improved quality of the raw materials.

Mr. Tutwiler.—I will give you a statement* but I cannot say anything regarding the future that would be accurate. I cannot say what labour will cost next year or in the next few years.

Mr. Kale.—I do not say that it should be very accurate but I should like to have a general idea as to how much can be saved in the next few years on account of the improvements you have spoken of.

Mr. Tutwiler.—Do you mean on the basis of present conditions?

Mr. Kale.—On the prospective conditions that you have spoken of.

Mr. Tutwiler.—If you wish me to take to-day as a basis I might be able to give you something.

Mr. Mather.—I take it that Mr. Tutwiler intends to convey that the reduction in the working cost in the next few years will depend not only on the efficiency of the new plant but also on the increased efficiency of the existing plant and that he hopes to return to the earlier efficiency of the old plant in some years.

Mr. Tutwiler.—May I ask Mr. Mather a question. You have been here now for over three years. You know the conditions of our plant. What would you say about the efficiency of our plant to-day as compared with the first day when you arrived?

Mr. Mather.—I quite agree that there are indications of it. What I wanted to make clear is that the prospects of efficiency do not depend solely on the coming of the new plant.

Mr. Tutwiler.—The new plant coming in with the old plant will make the old plant more efficient.

Mr. Kale.—Would you put down that efficiency at 15 per cent. or 10 per cent.?

Mr. Peterson.—What Professor Kale wishes to get at is the reduction in cost?

President.—After all none of us can prophesy much.

---

* *Vide* Statement No. XIV.

Mr. Ginwala.—You stated Mr. Tutwiler that the United States Steel Corporation fixed the price of steel at 28 dollars. That remained for a certain number of years steadily. Since then it has been raised by them to 43 dollars. Would that be a sufficient guide for us to infer that there is a general rise in the cost of labour, materials and so on in that proportion with regard to rails.

Mr. Tutwiler.—It is a fact. It is not a supposition.

Mr. Ginwala.—For arriving at the relative values 43 to 28 would be a fair indication of the increase in cost of labour, etc.

Mr. Tutwiler.—I should think so; but it would not apply in the case of Germany and France.

Mr. Mather.—I think you will find that the price of rails before the war was an international price agreed upon by the steel manufacturers of every country. At that time the United States was by no means the dominating factor in fixing that price. The price is agreed upon between the different countries. The increase is based on the increase in the manufacturing cost in all countries, not purely America.

Mr. Ginwala.—Will the United States Corporation price tend to correspond to the international price more or less.

Mr. Tutwiler.—I think so. As I said England and the States get about closely the same spread.

Mr. Ginwala.—How long have you been in charge of these works?

Mr. Tutwiler.—As General Manager from 1915 and as Works Manager from 1913 or 1914 and before that Superintendent of Blast Furnace.

Mr. Ginwala.—I presume your career coincides with the time when the works were started, and were manufacturing a reasonable quantity of steel.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—I think you showed me yesterday the sort of monthly account sheet that you keep. I want to learn your method of accounting generally.

Mr. Tutwiler.—We keep an accurate account of all materials and labour daily which is put in day by day in a monthly sheet.

Mr. Ginwala.—That represents the actual cost of everything at the works.

Mr. Tutwiler.—Yes, with the exception of things like the relining fund which is based on how much we use for three or four months.

Mr. Ginwala.—What other items have you got which are hypothetical?

Mr. Tutwiler.—Contingent fund, relining fund, etc.

Mr. Peterson.—If you would like to examine the accounts, we will show you the details and the actual books.

Mr. Ginwala.—I do not want to see the actual details. I want to get at the method of arriving at the cost. I was just asking you for the hypothetical cases. What are these?

Mr. Tutwiler.—Contingent fund, relining fund.

Mr. Ginwala.—May I take scrap also?

Mr. Tutwiler.—We take the actual cost of the previous 12 months as the basis and so we start with the previous experience in cost and raise or lower it month by month as the case may be.

Mr. Peterson.—Mr. Tutwiler could not give off hand the actual details of all the accounts and I suggest that the Accountant would be the best person to examine on this point.

Mr. Tutwiler.—As far as I am concerned everything that we use is weighed and charged for daily: for example so much coke is charged in the blast furnace by actual weight: in the case of the open hearth so much scrap is charged by weight.

Mr. Ginwala.—Who determines the price of these materials?

Mr. Tutwiler.—The prices are determined by the actual cost price to us. We get coal from our collieries and the price for May we take into account for June.—So we have to be one month behind.

Mr. Ginwala.—Take the statement at page 77 of the printed statement. Am I right in calculating the works cost by omitting the last three items?

Mr. Peterson.—You cannot do that because they are included in the first item—pig and scrap.

Mr. Ginwala.—But you have not actually given us the pig cost.

President.—I gather, Mr. Peterson, that your objection to disclosing the pig cost will be a permanent one. If so we can never use it.

Mr. Ginwala.—Would you object to give your pig cost for the earlier years?

Mr. Peterson.—We have no objection to giving that for 1916-17.

Mr. Tutwiler.—Do you mean our cost of materials and everything?

Mr. Ginwala.—Yes. Everything.

Mr. Peterson.—I am prepared to give it provided it is treated as confidential.

Mr. Ginwala.—I want to know the actual works cost. What I want is not an analysis but the cost of each material so much for coal, coke, etc.

(The statement* was handed.)

I have got this other table* in which I asked for certain information from the books. I am taking them under these heads:

Raw materials.
Fuel.
Labour.
Stores.
Services.

As regards the services you have omitted the welfare services. I want the figure corrected.

Mr. Peterson.—Does the Board ask for an authoritative statement prepared on this basis?

President.—As things stand at present the information was supplied to the Board at the request of Mr. Ginwala. But if the company are to put it in subject to any qualification that should be stated I understand that your position is that you do not agree that any inferences should be drawn from it.

Mr. Peterson.—The statement has not been checked in the General Manager's office.

President.—As we have no power whatever to compel the company to put in the statement and this statement has now appeared before the Board, what I want to know is whether the company has anything to say before putting it in.

Mr. Peterson.—I do not think this is an accurate method of getting at the cost of steel.

President.—That is a point which Mr. Ginwala will deal with in the course of the examination.

Mr. Peterson.—All interest, depreciation charges, etc., are thrown on steel instead of on pig. Clearly the cost of steel as shown by this method will be too high. We have given these figures* but we are not to be taken as agreeing that this is an accurate method of showing them. If the Board wishes that the company should prepare an authoritative statement of this kind I should prefer to have them checked. The figures were prepared in a very hurried manner. I would put in the statement subject to any alterations that we find it necessary to make.

---

* Not printed.

Mr. Ginwala.—When we have arrived at the correct figures let us decide in what form these accounts should be made.

President.—The statement is prepared for 1922-23. We ought I think to send them in writing a clear statement of what we require.

Mr. Ginwala.—In the statement you have just given me you have included "bought scrap." Is it bought from outside?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—You say in the statement that this scrap was used from stock.

Mr. Tutwiler.—Because you ask for scrap bought and used.

Mr. Ginwala.—That is to say this scrap was from previous year's stock.

Mr. Tutwiler.—Some of it was and some of it was not.

President.—That must be so. Scrap is being produced every day in the works.

Mr. Tutwiler.—What is produced may be used the very same day and some of it may be used the next day.

Mr. Ginwala.—By raw materials I mean coke, ore or flux and everything of that kind. From these you derive a certain quantity of pig iron, pig scrap and steel scrap. Therefore you cannot take credit for the scrap that you derive from those raw materials. Only the scrap which you bring from previous year's stock you are entitled to take.

Mr. Tutwiler.—The stock of scrap shown here is the actual stock of the previous year. Every day we buy scrap from the Tinplate Company, and the Agricultural Implements Company and so on. One day they might send one ton and the next day 100 tons.

Mr. Ginwala.—I may assume that these are scraps derived from stock but not obtained from outsiders. This side of the statement includes all expenditure during the year. On the credit side you have given the values of these bye-products and the surplus pig iron at sale price during the period.

Mr. Tutwiler.—That is at to-day's sale price.

Mr. Peterson.—The selling price refers to 1922-23, the period for which the statement was prepared.

Mr. Ginwala.—I take it that most of your surplus pig iron is disposed of during the year.

Mr. Tutwiler.—At one time we had 100,000 tons in stock.

Mr. Peterson.—There will always be stock at the end of the year. We also carry a certain amount of stock.

President.—Surplus pig iron does not mean stock. Surely it means what you have actually sold during the year.

Mr. Ginwala.—You manufacture pig from your raw materials. You use up a certain quantity in the manufacture of steel and the balance is what I call disposable surplus.

Mr. Peterson.—You want the quantity actually sold and delivered in the year.

Mr. Tutwiler.—Surplus pig 7·58 lakhs represents the number of tons of pig iron sold and in stock on the 31st March 1923. That represents the surplus sold and left in that year.

---

* Not printed

Mr. Ginwala.—This quantity of scrap that remains is the surplus produced during the year.

Mr. Tutwiler.—Produced during that year and that carried forward from the previous year.

Mr. Ginwala.—Suppose you manufacture 114,000 tons of steel. How much scrap it would leave?

Mr. Tutwiler.—You want our practice from pig iron to steel. Do you want for rails, bars or what?

Mr. Ginwala.—Let us take the total quantity of steel.

Mr. Tutwiler.—Roughly 75 per cent. from ingot to finished steel.

Mr. Mather.—That would be roughly about 25 per cent. scrap. 20 per cent. scrap and the rest other things.

Mr. Ginwala.—May I take it that the cost of this steel is calculated on this standard. I take it that according to your practice the actual expenditure that is shown on the debit side divided by the number of tons would roughly correspond to the works cost of steel.

Mr. Tutwiler.—Approximately. What about the surplus pig. I have given you the yield from ingot to finished steel. But this does not include pig.

Mr. Ginwala.—When your greater extensions are finished I want to know the total output that you will get: so many thousand tons of pig iron, steel, etc.

Mr. Tutwiler.—I would suggest that if Mr. Ginwala would see the flow sheet* it will give him all the information he wants.

Mr. Ginwala.—Allowing for the wastages in terms of money I simply want to know how much pig iron the plant will produce with the greater extensions included. You can give me the production† of the present plant and how much it will produce after the extensions come into operation with a flow sheet showing the distribution of materials to the future plant.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Will you be able to give me the history of the construction of the greater extensions together with the cost at different times.

Mr. Peterson.—I cannot give you off-hand the actual amount of expenditure at different times. But we can give you a statement.‡

Mr. Kale.—In your blast furnace and open hearth departments do you think that the kind of men that you train in the technical institute will be useful to you? If you take young men from another class of people in Indian society, men with traditions of work, such as blacksmiths and other classes, it is more likely that they will prove to you more satisfactory than the sort of men you get here from the institute.

Mr. Tutwiler.—Men who are trained in the Technical college are trained for the place of foreman. In the old days nobody had any education and there was no improvement in the blast furnace, steel works, etc. Until chemists and trained men came into the steel and iron business there was no improvement. Our actual workmen on the plant are from the class you referred to but the foreman type you have to get from people with some knowledge of chemistry and metallurgy.

Mr. Kale.—Do you mean to say that the men at present employed there possess a knowledge of chemistry.

Mr. Tutwiler.—Certainly. The Departmental heads, *i.e.*, Superintendents and Assistants are men with theoretical and practical knowledge. To be successful with pig iron and steel making certainly men with theoretical knowledge and a knowledge of mechanics should be got.

---

* Not printed.

† *Vide* Statement No. XV.

‡ *Vide* Statement No. XVI.

Mr. Kale.—So you think that the people you are turning out of your institute will be more satisfactory?

Mr. Tutwiler.—I think that has to be found out yet. We may get 1 per cent. or we may get 50 per cent. What we have to do is to take the whole lot and pick the promising ones.

Mr. Kale.—The men whom you get for your Technical Institute generally belong to the middle class of Indian society—and these men are not expected to put in that kind of hard work that is wanted there. Even in America and in England it is not the young men who come out from public schools and Universities who are taken for this kind of work.

Mr. Tutwiler.—In America I know educated men are coming more and more into the work. We have in the Technical Institute men who are related to men like our Assistant Chief Electrical Engineer, and people of that type. I know a good many are useful because their relatives are in the work, and we can only judge them by that type.

Mr. Kale.—What happens is this. Men who go in for higher education come from a class who are not used to this kind of manual work. You do not want men of this class in your open hearth department for example. So I thought it might be an advantage in the long run if you could select men from another class who are used to hard manual work.

Mr. Tutwiler.—The men actually doing the labour in the open hearth are men from the class of life of which you speak. It would not be possible to put him in the Technical Institute and give him an idea of chemistry and metallurgy. But if it is ultimately intended to run this place by eliminating Americans and Europeans as much as possible then the only way to get at it is through the medium of the Technical Institute. They have got to show it to the lower men. In Western countries the actual steel workers are mostly uneducated men—I suppose there are more educated men in America who are doing that kind of work than in other countries. That has been handed down from generation to generation in that country. It will take a very long time before our men will replace the Americans but when we started here we had all European labour in the works. We have eliminated in the open hearth department crane drivers and other workmen who are now all Indians. The third helpers have entirely disappeared but there are a few second helpers still left but these second helpers are competent to take turn as first helpers. Superintendents and Assistants are still here but it will take many years to eliminate them.

Mr. Kale.—I find in the statement you have put in that the percentage of cost of producing labour and of service expenses comes to the same amount.

Mr. Tutwiler.—The service expenses are say about 9 per cent. and the producing labour is also 9 per cent. of the cost per ton.

Mr. Kale.—Do you not think that from the point of view of economy and also from the point of view that in a few years you must have as many Indians as possible in the place of Americans and Europeans, it is desirable that this substitution should be carried out considerably in the course of the next 10 years? Do you think it possible that in the course of five years a material reduction would take place in the service cost under the system of training you are giving?

Mr. Tutwiler.—Certainly. If we had not thought that we would be able to reduce our overhead charges to a certain extent as far as labour is concerned by reducing the number of covenanted employees we would not have taken this course. But I cannot tell you what exact reduction it will effect in the course of ten years.

Mr. Kale.—The general impression among the people is that when an industry gets protection, in the course of a few years, the compensation that the country must receive should be that Indians should receive industrial

---

Vide Statement No. XII.

training, and at the same time, get employment in that industry which is protected. From this point of view can your company say positively that in the course of ten or even 15 years it will be possible to introduce Indians into these places and thus reduce the cost?

Mr. Tutwiler.—But this has already been done.

Mr. Kale.—In two departments.

Mr. Tutwiler.—In more than two departments. In the blast furnace we had 22 Europeans to run one blast furnace making 150 tons of pig iron a day. To-day we are making a round 1,200 tons of pig iron a day with 8 Americans. In the open hearth we had 66 covenanted men making less than 2,000 tons of steel a month. To-day we have about 40 making on an average 15,500 tons a month? In the mills which were built to roll four to five thousand tons per month we are rolling 13,500 tons.

Mr. Kale.—In your statement you have laid stress on the point that you have started a Technical College and that you intend to reduce your expenditure by putting Indians in place of costly foreign labour, wherever it is possible to do so.

Mr. Tutwiler.—That is why we started the Technical Institute.

Mr. Kale.—Therefore I ask you whether the present system you have adopted to train Indians will yield the result expected.

Mr. Tutwiler.—Yes. I will just give an example. In the southern part of the United States, when the manufacture of steel was begun, men were brought from England to operate the furnaces. But these have now been entirely eliminated.

Mr. Kale.—In how many years did this take place?

Mr. Tutwiler.—That I do not know.

President.—Would it be within the province of the Board to make recommendations as to the manner in which the company should run the Technical Institute?

Mr. Kale.—The Legislature might insist that they should take this step, as a condition for getting protection.

Mr. Peterson.—We are endeavouring to do so. It has been our constant policy.

Mr. Tutwiler.—We have considered this. When our plant was started, our output of steel was less than 2,000 tons a month and we had 155 men and to-day we are producing about 15,000 tons and our covenanted labour is 93.

Mr. Kale.—I want an assurance on that point, namely, that protection being after all a sacrifice on the part of the consumer, that sacrifice will be rewarded among other things by increased employment of trained Indians. In the minds of the Legislature this will be a very important consideration.

Mr. Tutwiler.—Look at the increased production and the decrease in the number of foreign labour.

President.—It would be very difficult for us to make recommendations saying that we think that the Technical Institute should be run in a different way.

Mr. Kole.—The public and the Legislature might ask whether the present method that is followed in the Technical Institute is the right method of getting the men.

Mr. Tutwiler.—We are following the practice in America and other countries.

Mr. Peterson.—The answer is we would not have spent large sums if we had not thought so.

Mr. Mather.—Perhaps I may be allowed to say a word here. I have nothing whatever to do with the company's scheme for administering the institute but I do think that it is a good method and from my knowledge of the kind of posts the students are intended to fill when they come out of the college, I think the institute is running on right lines.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., recorded at Jamshedpur on the 25th August 1923.

Mr. Ginwala.—I want to know the amount of Customs duty paid on the various articles with a view to consider how it affects the cost of production.

Mr. Peterson. That can better be given by a statement.* It is impossible to give you off-hand the amount of Customs duty paid on each article. I want to make several suggestions as regards alterations in the tariff schedule and on the actual question as to the articles on which Customs duty has been paid. Mr. Sawday knows more than I do and it will perhaps be better to examine him on that point.

Mr. Ginwala.—Then he can make suggestions for any modifications that may be necessary.

(The examination of Mr. Sawday was fixed for Monday the 27th August 1923.)

Mr. Ginwala.—I want the following statement prepared for my use—

Mr. Peterson.—I suggest the best plan would be for Mr. Ginwala to indicate in writing the form in which he wants the statement to be prepared, and then we shall put in a written statement in that form.

Mr. Peterson.—Before the regular examination begins I want to make clear one or two points. I stated yesterday as a general proposition that for an industrial enterprise to be considered reasonably successful it should yield 10 per cent. on the fixed capital expenditure. If depreciation is to be taken into account in calculating the capital I should then raise the figure to 15 per cent.

President.—That is a point we have not yet disposed of.

Mr. Peterson.—The other point I want to mention is the proposal regarding the manner of dealing with depreciated exchanges. I have a further proposal here. I think it would probably be better if I explain it in my oral evidence.

सत्यमेव जयते

The other point is about the Customs duty. I have prepared a copy† of the tariff schedule as we suggest that it should be amended. I will put this in as a formal schedule.

President.—We have no spare copies for our use, and I think it would be much better to put it in later.

Mr. Peterson.—Perhaps the only point is that you might want to ask questions on it. (Mr. Peterson was asked to get copies of the tariff schedule with the proposed amendments prepared for the use of the Board.)

President.—Let me now revert to what Mr. Ginwala was asking. The information he wanted mainly is about the provisions in the contracts which the Company have entered into either for sale of its products or for the purchase of materials or for the transportation of materials (I add that to include the contract with the Bengal Nagpur Railway).

Mr. Peterson.—Will that include steel and pig iron also.

Mr. Ginwala.—Yes, if you choose. The more complete you make it the more will it be to your advantage.

President.—The information which Mr. Ginwala precisely wants is—

The provisions in the contracts entered into by the Company either for the sale of their products or for purchase of materials‡ or for the rates to be charged for the carriage of goods. We should like to have the current price at the time the contracts were made compared with the prices payable under the contracts, and also the difference between the prices payable under the contracts and the prices which would otherwise have been payable during the year 1922-23 or 1921-22 whichever you prefer. Finally we should like to have the quantity of goods sold or purchased during the year under the contracts, or in the case of the Bengal Nagpur Railway the tonnage of goods conveyed.

---

* *Vide* Statement No. XVII.

† Not printed.

‡ *Vide* Statements Nos. XXII to XXVI.

Mr. Peterson.—Does that mean that you want all our contracts which extend over a period of five years?

Mr. Ginwala.—Five years or more.

Mr. Peterson.—I am afraid that is impossible. I cannot say what will be the effect of the contracts three years hence. I could give you the figures and you can draw your own inferences.

President.—We have not asked you to prophesy. You can give us figures for 1921-22 or for 1922-23.

Mr. Peterson.—In the case of some of the subsidiary companies the expectation of the price at which they would be able to produce affects the profit we may expect from these contracts. Some of these subsidiary contracts might be extremely profitable but that depends upon the efficiency with which the subsidiary companies operate their plants. All these considerations enter into the question of what profit we could obtain from these contracts. I should say generally that in the case of the subsidiary companies it is quite impossible to ascertain these facts. The company can only estimate.

Mr. Ginwala.—You agree to sell a certain quantity at a certain rate in your contract.

Mr. Peterson.—In the case of the Agricultural Implements Company we have a contract for five years but we actually hold the major portion of the capital and it is obvious that if there are profits we will get a share in them. That consideration must be balanced against any concession in price.

You ask us to give you a statement of certain prices for the year 1921-22 but these considerations would affect any inferences that can be drawn from that year. In our opinion that is a very important point.

President.—I think it is important that when a Company in response to a request from the Board puts in a certain statement, and apprehends that inferences which are not accurate might be drawn from that statement. They should make clear their position at the time they put it in.

Mr. Ginwala has been trying to explain to you what was at the back of his mind.

Mr. Peterson.—He wants a statement of our contracts. It is extremely difficult to say now how far a contract would be profitable in the future.

President.—In the representation you pointed out that you were losing money owing to certain contracts you had made with the Railways. Mr. Ginwala wants to know I think whether you had other contracts which turned out more profitable than you originally expected.

Mr. Peterson.—The actual profits of the Company are much the best test.

Mr. Ginwala.—That is in the steel industry, but you are carrying on business in other directions.

Mr. Peterson.—We carry on no other business.

Mr. Ginwala.—Then you must take credit for the other contracts. That will partially explain the argument against you.

Mr. Peterson.—I don't follow.

Mr. Ginwala.—The argument against you is this that you have entered into a series of long term contracts upon which you are losing a considerable amount of money at the present moment which money you must somehow earn out of the steel industry and in order to enable you to do that you must ask for some protection in addition to the normal protection you would require if you had not got these long term contracts. On the whole you may be able to make out that these long term contracts had turned out to your advantage.

Mr. Peterson.—I cannot say off-hand now. I can produce figures to satisfy you. On the Railway contracts it is not a question as to estimated loss but a matter of actual loss compared with foreign prices. With regard to future contracts we consider that taking these as a whole for the entire period they should prove profitable.

President.—We have made the request and I don't think we can do any more.

Mr. Peterson.—I would like to point out that this statement will take a very long time to prepare. I shall have to send for these figures to Bombay and there is no chance of getting them before the Board leaves Jamshedpur.

Mr. Ginwala.—It is quite possible that we may have to examine you again.

Mr. Peterson.—I would like to point out one thing. These requests for comparative rates and prices mean throwing a great deal of work on the Company and it will take a long time. Could not these prices be obtained from some Government source such as the Director General of Commercial Intelligence or some such department. We can supply figures so far as they concern this Company but we are asked to compare them with other prices prevailing over a period of years and this it will take time for us to do.

Mr. Ginwala.—In some of your contracts you have put down the f.o.b. price in English or American ports on a particular date. You know where to get these prices from.

Mr. Peterson.—They are taken from trade papers. You ask us to compare our concession freights with the normal railway freights. All that has to be worked out.

President.—Mr. Peterson has told us this morning that it would be preferable if we send our request for information in writing before he leaves Jamshedpur. We might discuss the matter with him privately or he can write to us explaining the difficulties. We have not much time for public examination.

Mr. Kale.—I want to ask one or two questions on the same point as has been raised by Mr. Ginwala.

In the course of your agreement with one of the subsidiary companies you say that the mean f.o.b. price in England and in America will be taken as the basis to which a certain amount will be added as freight charge and that price you will receive for your steel, which will practically be the average c.i.f. price. In asking for protection you seek to raise prices in India but the price of steel that you will supply to the subsidiary companies, will not include the amount of protection. The result of protection will, therefore, be that in the case of these companies the price will not increase.

Mr. Peterson.—That will not apply to all the companies.

Mr. Kale.—Take the Tinplate Company. In this case your Company will not derive the full benefit of the protection that you are asking for.

Mr. Peterson.—In the case of the Tinplate Company we have got one-third of the shares *plus* one half of any profits and the profits may be very much larger than the duty on steel.

Mr. Kale.—Take the other agreements—the Agricultural Implements Co. or the Indian Wire Products Co.

Mr Peterson.—We supply the Tinplate Company with 35,000 tons maximum. In the case of other companies the supply is very small.

Mr Kale.—In the case of the Agricultural Implements Company you supply 4,000 tons of steel minimum; in the case of the Indian Wire Products Company 1,500 tons minimum. The total amount is not quite inconsiderable, and on this amount you will be losing the benefit of protection so far as the Steel Company is concerned. Is it not unfair that a duty of 33 per cent. should be levied for you and at the same time you should be allowed to sell your steel cheaper to these Companies?

President.—Surely even under a protection it is not an offence for a Company to sell at a lower price than it might get. I take it that in order to improve the market for their own products they assist the promotion of subsidiary industries by foregoing part of the price they ultimately hope to obtain. It is really a matter of subsidising.

Mr. Kale.—It is equally true that the Company is transferring a part of the loss to other consumers. When you are asking for protection you are increasing the price to the general consumer.

President.—Is it your case Mr. Kale that under a system of protection the manufacturer should keep his price absolutely uniform to all his buyers?

Mr. Kale.—The point is that the full benefit that is expected from protection is not going to be derived by the Company, so that perhaps so much protection may not be necessary.

The Company has committed itself to certain contracts and they may not be quite compatible with the protection they ask for. The Company will be supplying a certain amount of steel at a price which will not be the market price after the duty of 33 per cent. is imposed.

Mr. Peterson.—It is very difficult to follow the argument. We always give a substantial discount when large quantities of steel are taken from us. We might give it in the form of a reduction in price or in any other way.

Mr. Kale.—So that protection will not make any difference in the position so far as these companies are concerned?

Mr. Peterson.—These contracts are for five years and the amount to be supplied under them are very small except in the case of the Tinplate Company. In most cases we have a substantial share in the capital. The Calmoni Engineering Company take steel at the current market price.

Mr. Kale.—What will be the total?

Mr. Peterson.—The total amount affected will not be more than the supply to the Agricultural Implements Company and the Indian Steel Wire Products Company.

Mr. Kale.—What about the Indian Steel Wire Products Company the maximum supply to which is put at 20,000 tons.

Mr. Peterson.—I do not think they are likely to take anything like that in 5 years. I think if you ask that Company they will confirm that statement.

President.—The point I want to begin with now is depreciation. At the last meeting we considered this but came to no decision. I think you gave us the figures of the total sum actually distributed in the costing account as depreciation. Can you let us have the figures again?

Mr. Peterson.—

	Rs.
1920-21	35 lakhs.
1921-22	40 lakhs.
1922-23	45 lakhs.

President.—The items given in the letter to the Government of India go back to 1916-17.

Mr. Peterson.—They are as follows:—

	Rs.	
1916-17	21,50,000	
1917-18	14,27,000	
1918-19	25,66,000	(9 months only).

President.—Then I may take it that these are the sums the Company considered it reasonable to charge as part of the cost of production.

Mr. Peterson.—We have taken actuals. These are figures shown in the balance sheet. Since 1920 we have allocated this in the cost accounts.

President.—You put forward certain figures in your letter to the Government of India showing what it cost you to produce steel rails in India. May I take it that you inserted for depreciation what you considered a fair charge? Were they taken on the basis of the distribution of the total sums you are now giving?

Mr. Peterson.—These sums now stated were allocated in exactly the same proportion as the general service expenses were allocated in the cost accounts.

President.—Do you still adhere to these figures as being a reasonable estimate of what you ought to charge in the cost account. If you are going to charge depreciation as part of the cost of production does not that mean that to that extent your plant and so on has deteriorated during the year?

Mr. Peterson.—Not necessarily deteriorated. It means that parts may have to be replaced—possibly some alteration in the process may occur which may make it necessary to put in new plant. This amount is a reasonable reserve against contingencies.

President.—Therefore that amount is finally written off?

Mr. Peterson.—That would have no relation to the amount written off in the balance sheet.

President.—But should it not? If this is a fair charge in the cost of production, does it not follow that you ought to write it off from the capital account?

Mr. Peterson.—It may be that we will not be able to do so.

There are lots of companies who in good years write off more and in bad years write off less.

President.—Doesn't that mean that in your opinion it should be written off? It means that it is a final charge to be finally paid off out of what you sold for the year.

Mr. Peterson.—I am afraid I don't quite follow. In my opinion that amount should be reserved.

President.—It is not a question of reserve at all, if it is a part of the cost of production. Supposing I am selling an article to you and in fixing my cost of production to enable me to ascertain what price it is necessary to charge in order to cover my expenses, I have got to take into account the fact that the plant, apparatus and so on deteriorates from time to time. To replace them I allow a certain sum. Does it not mean that I am paying for the replacements out of this part of the price I have set aside?

Mr. Peterson.—That is what actually happens.

President.—Does it not follow that you ought to write down the value of the plant, etc., in the balance sheet?

Mr. Peterson.—It is a matter of system. Some Companies follow one system, some another; some actually write down part of the capital.

President.—I understand that by your method you show on one side of the accounts depreciation and on the other side you show your fixed capital expenditure at cost. I understand your position is that you ought to be allowed to earn a profit on the whole of your fixed capital expenditure as it stands in the balance sheet—without deducting depreciation on the other side. Take the balance sheet for 1921-22. Your fixed capital expenditure is 5·82 crores on the original plant and 10·57 on the greater extensions. I understand that you consider that the company ought to be able to earn a profit of 10 per cent. on the whole of that capital. I put it to you that if that is so you have no right to charge anything for depreciation in your cost accounts because it has not depreciated.

Mr. Peterson.—If we are incorrect then I should raise the rate of profit.

President.—What is the method you prefer? *Primâ facie* you can do it in one of two ways. You can say "I don't think my plant deteriorated at all as shown in the balance sheet." In that case you must omit from your costing account all provision for depreciation because it has not depreciated. The other way is to write it down in order to arrive at the capital as shown by the amount taken into your costing account.

Mr. Peterson.—You mean for the entire period of years?

President.—I think so.

Mr. Peterson.—I really don't follow the argument. The actual expenditure on the greater extensions is a certain sum to replace which a certain sum should be set aside. It seems to me every manufacturer must consider the future risks.

President.—You may have very little depreciation on account of the greater extensions up to the present moment because it is only one year since these extensions started operations.

Mr. Peterson.—The greater extension plant may have already in several instances depreciated. New processes may be coming into existence that might lead to our eventually replacing parts and that is a consideration any manufacturer should make provision for.

President.—If so then you must reduce your capital to that extent before you begin to calculate profit.

Mr. Peterson.—If you wish us to calculate in this way I would put the figure at 15 per cent.

President.—After all the point is not a very difficult one. You are not entitled to charge twice over for the same sum.

Mr. Peterson.—The amount exactly expended on the greater extensions is known. The source from which it was obtained does not enter into the question at all. The question what depreciation should be allowed to cover the necessary repairs, replacements and the possible risks of alteration in process or machinery in the plant seems to me to be a simple question, and depends on the rate of percentage you take. I will say that a reasonable rate of depreciation is 7½ to 10 per cent. of the total amount of money expended on machinery and other services which will be about 22 crores. Therefore the total depreciation will be so much. From the total production from that plant I would take that amount.

President.—In that case it clearly follows that you must deduct depreciation before you take the capital on which you are going to calculate profit otherwise you are calculating the same money twice over.

Mr. Peterson.—If you prefer to take it this way then the profit should be 15 per cent., because money invested in an industry, if it is to be regarded as a successful industry should yield 10 per cent. net and I should take 5 per cent. for depreciation. That is how I have arrived at 15 per cent.

President.—I am afraid I do not in any way follow that argument. I don't see how you can claim either interest or profit on what you set aside as depreciation.

Mr. Peterson.—5 per cent. should go for depreciation and 10 per cent. will be profit.

President.—You have already charged depreciation finally in the cost of production and you are not entitled to charge again. What we are trying to arrive at is this. What is the fair price which during the next few years the steel manufacturer in India ought to be able to get so that he may earn a reasonable profit. First of all we have to ascertain the cost of production and to that we must add some estimate of what is a fair profit.

Mr. Peterson.—On a question of that kind opinion will differ.

President.—But I am trying to ascertain what the opinion of the Tata Iron & Steel Co. is; that is to say if in the case of production depreciation has been charged to the full extent of what you consider necessary, it seems contrary to business principles not to deduct depreciation from your capital before you begin to calculate the profit that you ought to get.

Mr. Peterson.—I don't follow.

President.—I am sorry, Mr. Peterson.

Mr. Peterson.—The actual accounts of the profits of a business is something quite different from the costing accounts.

President.—But surely they must be brought into relation with each other.

Mr. Peterson.—I would say that the amount charged for depreciation every year is a reserve against the risk of the business.

President.—If it is a reserve against the risk of the business and increases the fixed capital expenditure, you have no right to show it as part of the cost of production. If it is a reserve then you are entitled to earn profit on your reserve, but if you have written it off as depreciation and included it in the cost of production, you are not entitled to ask other people to take that into account in calculating what is a fair profit.

Mr. Peterson.—We have given you all the figures we have and our opinion what the net profit should be.

President.—Then your position is this. It is fair that we should charge in the cost of production what we consider a fair estimate of the sums that ought to be written off for depreciation and that we are also entitled to earn a profit on those sums which we have set aside.

Mr. Peterson.—May I reserve that question and consider it? It is a complicated question, and I do not clearly understand on what basis we are calculating.

President.—As regards the rate of profit your position was this. You told us last time when we put questions that you thought 10 per cent. to be a reasonable profit on the total money invested in the business, setting aside working capital and you tell us to-day that if there are to be deductions on account of depreciation you ought to get 15 per cent. as a fair profit. Do you urge that seriously?

Mr. Peterson.—I should say if you do not take my estimate of depreciation then 15 per cent. is not a high estimate.

President.—That would mean increasing your profit to something like 12 per cent. on the full capital.

Mr. Peterson.—That would depend on the amount taken for depreciation. If the capital is to be depreciated from year to year and the profit is to be calculated on that depreciated capital at the end of a certain number of years the capital will disappear altogether and there will be no profit. This will be a sinking fund to replace that capital.

President.—Why do you want to increase it from 10 to 15 per cent.?

Mr. Peterson.—The profits of an industry ought to be a certain percentage of the fixed capital expenditure and if that fixed capital expenditure is to be written off from year to year it will disappear altogether. I don't think 15 per cent. is too high.

President.—Assuming that this is true but what is the basis for this 15 per cent.?

Mr. Peterson.—10 per cent. profit on capital and 5 per cent. for depreciation.

President.—You have told us that you are apprehensive that under the system I suggested your fixed capital might disappear altogether as an asset on the balance sheet.

Mr. Peterson.—What I mean is that if profit is to be calculated on the fixed capital expenditure and a certain sum depreciated from year to year it must disappear altogether.

President.—Supposing you start with a fixed capital expenditure of 2½ crores. If you write off depreciation from year to year and actually use the money in the business, your capital account would still be at 2½ crores: at the end of a period of years there would be no reduction.

Mr. Peterson.—I only mentioned our system.

President.—I am not criticising that. But I should like to know definitely whether you suggest that, if you write off depreciation from year to year and then employ the money so set aside in the business the whole fixed capital expenditure will disappear?

Mr. Peterson.—If there is no entry on both sides the capital will remain the same.

President.—If your money allotted for depreciation is actually spent on the plant would it not bring the same result?

Mr. Peterson.—Obviously if you write off nothing from either side of the account the fixed capital expenditure will remain the same.

President.—On this system the fixed capital expenditure on the old plant would be Rs. 2·80 instead of Rs. 5·80 crores. I am taking the figures for 1921-22 because we have not got any later balance sheet.

Mr. Peterson.—I have already explained that a considerable part of the depreciation is a sum taken for the greater extensions from the profits.

President.—What is the actual figure you ought to take for depreciation.

Mr. Peterson.—It may be very much larger than the amount actually written off.

President.—You have made certain entries in your cost statements which I do not think can be justified unless they represent the amounts which in the opinion of the company should be written off the capital account. These are then figures I am obliged to take in endeavouring to ascertain on what capital the company have to earn a profit.

Mr. Peterson.—There is no question of making entries on both sides of the accounts. The fixed capital expenditure would actually be reduced and it would follow that the profit to be earned by the Company will be reduced by that amount. This is my reason for suggesting an increase of 5 per cent.

President.—I am quite unable to follow the reasoning. The only inference I can draw is that you had some figure in your mind as to the fair profit when you prepared the balance sheet and looking at it again after deducting the amount for depreciation you raised it to 15 per cent.

Mr. Peterson.—The figure I gave you was that generally expected before the war. Capital cannot now be obtained for new industrial enterprise of this nature unless there is a fair probability that it will yield 15 per cent.

President.—If you have any authority for that proposition, I shall be very glad to be referred to it.

Mr. Peterson.—I think it is a reasonable figure.

President.—When you have actually raised a great part of your capital on interest which is less than 10 per cent. is it right to claim that for industrial purposes you cannot get capital at any rate less than 10 per cent. That does not seem a valid argument.

Mr. Peterson.—You are referring to the preference shares.

President.—Your proposition that the profit on the capital invested in industrial concerns ought to be more than 10 per cent. may be right, but it does not follow from your argument.

Mr. Peterson.—The preference shares are cumulative. We could not obtain preference shares to-day at that rate of interest.

President.—The interest on government securities is also cumulative.

Mr. Peterson.—We have had to pay a higher rate of interest on debentures which are secured by property worth three times their amount.

President.—If a new company is started they will have to pay more than 10 per cent.?

Mr. Peterson.—They would certainly not obtain capital unless you could hold out a hope of at least 10 per cent. No one would put in capital either in this country or in any other country unless you could hold out a prospect of at least 10 per cent. on the ordinary share capital.

President.—Is not that rather a different proposition from what you advanced before.

Mr. Peterson.—I should say that you may have to pay as much as 9 per cent. on preference shares if it were possible to get them and 7½ to 8 per cent. on debentures. That would be my estimate.

President.—Even so it is not the case that to obtain capital for an industry you have actually got to pay 10 per cent. on the whole of the capital.

Mr. Peterson.—I do not think it is possible to-day to obtain money for an enterprise of this nature in this country or even in any foreign country unless you could show that there was a strong probability indeed of an ultimate return of 15 per cent. and probably 20 per cent. on the capital. The risk is so great, especially the risk in India. In yesterday's papers you will have noticed a complaint made to the Commerce Member in Calcutta that many of the collieries were not even paying 20 per cent. In these circumstances I do not think that the Steel Company has at all put forward any extravagant claim in this matter.

President.—It does not follow from the arguments advanced that 10 per cent. is reasonable.

Mr. Peterson.—That may be due to the fault of my reasoning. It is my conviction that you cannot obtain money for an enterprise of this nature unless you can show an expectation of at least 15 per cent. to-day. We know of several enterprises that had been started but had been dropped largely for that reason. We know of many cases in which large English companies proposed to come out here and would not carry through the negotiations because they could not be assured of a rate of profit approaching that figure.

President.— There is another point I should like cleared up. On the basis of the present plant your working capital I understand may be put at Rs. 2 crores, and when the greater extensions are in full swing you will want about Rs. 5 crores.

Mr. Peterson.—Not on the basis of to-day. Our working capital would be more than Rs. 2 crores.

President.—I think the year we took was 1921-22. Your statement was that about Rs. 2 crores was a fair estimate for the old plant and that you were entitled in your cost statements to charge interest on Rs. 2 crores.

Mr. Peterson.—These are the actuals including interest on debentures, and on loans and deposits.

	Rs.
1916-17	4 lakhs.
1917-18	6·40 lakhs.
1918-19 (9 months)	11·18 lakhs.
1919-20	14·41 lakhs.
1920-21	23·21 lakhs.
1921-22	25·49 lakhs.
1922-23	34·70 lakhs

The figure we have given you for the cost statement in 1922-23 is Rs. 30 lakhs.

President.—You realize of course that in the cost statements for 1921-22 the total sum taken (Rs. 25½ lakhs) exceeds by Rs. 10½ lakhs the interest on the sum required as working capital.

Mr. Peterson.—That may be. We have shown the actual amounts paid.

Mr. Ginwala.—I would like to determine the amount of your capital—fixed capital and working capital. In the balance sheet of 1921-22 excluding the greater extensions you show fixed capital expenditure Rs. 5·81 crores on the credit side. Does that mean that all the repairs and renewals have from time to time been carried out that you have kept up the value at its original level?

Mr. Peterson.—The entry in the balance sheet is the actual cost; it may be worth less or it may be worth more.

Mr. Ginwala.—Has it got any relation to its present value?

Mr. Peterson.—It is a simple statement of cost as shown in the books.

Mr. Ginwala.—Do I understand that the works constructions which represents Rs. 2·32 crores is actually expended. When you have written off a certain depreciation do you bring.

Mr. Peterson.—I think it will be new expenditure.

Mr. Ginwala.—To keep the plant up to date from what fund will you take the money?

Mr. Peterson.—From the depreciation fund.

Mr. Ginwala.—I am trying to determine your capital. I am not talking of the greater extensions. You claim a return on the fixed capital as it appears on the balance sheet and it will therefore be necessary for us to determine whether this is a fair value of the properties.

Mr. Peterson.—I am contemplating merely a return on the actual money spent. Whether it can earn such a return or not is not the question.

Mr. Ginwala.—Are the amounts shown against "properties, etc," those actually paid for the concession, etc.

Mr. Peterson.—And amounts expended on them in the installation of plant, machinery, etc.

Mr. Ginwala.—That applies I think to the full lot. You are giving the figures of working capital roughly at Rs. 2 crores. That you derive from these figures on the credit side.

Mr. Peterson.—That figure was not taken from any particular item. That was an estimate of the working capital required for the old original plant.

Mr. Ginwala.—From that you deduct the greater extensions—cost and stores. On that also you expect the same return.

Mr. Peterson.—I deduct the interest paid on the working expenses and take the balance as return.

Mr. Ginwala.—What will that work out to?

Mr. Peterson.—7 to 8 per cent. That may go up or come down with the Bank rate regularly. We have paid much less in previous years.

Mr. Ginwala.—Look at page 17 where you have your investments. Excluding the Government papers the total investments amount roughly to Rs. 42 lakhs. Will you include that in your capital for earning purposes.

Mr. Peterson.—No. Not for costing.

Mr. Ginwala.—What is the source from which it was obtained?

Mr. Peterson.—From the original capital.

Mr. Ginwala.—Then really to get at your earnings on your subscribed capital we must include this.

Mr. Peterson.—Yes.

Mr. Ginwala.—We now come to the question of depreciation. There are various ways in which depreciation accounts are kept. One is the income-tax basis which is a hypothetical depreciation account.

Mr. Peterson.—Not hypothetical so far as the Income-tax Collector is concerned.

Mr. Ginwala.—The next method is this. You take a hypothetical percentage. You take the life of a work say at 10 years, and you write off 10 per cent. every year.

Mr. Peterson.—Yes.

Mr. Ginwala.—The other method is this. You take a hypothetical figure—a percentage. You put that in your assets and from time to time you go on replacing that depreciation from that fund or any other fund and in that case you are making no further deductions. In the meantime you will carry out repairs, renewals, etc., to keep the plant up to its proper efficiency. You take a certain percentage and put it down to a separate fund and then you go on making ordinary renewals, repairs, etc. Therefore though you make up a separate depreciation account and call it your asset it will not actually be an asset.

Mr. Peterson.—Depreciation must have gone back into the plant ultimately.

Mr. Ginwala.—Take the depreciation fund—Rs. 2·95 crores. It may not actually represent your present asset at all because you spend a considerable portion of it in repairing and replacing the plant, etc., which go into the ordinary working expense.

Mr. Peterson.—We have also other funds for this purpose.

Mr. Ginwala.—It gives one a very rough idea I take it as to the actual amount that you put into the depreciation fund and what remains after carrying out repairs, renewals, etc. Look at the profit and loss account. Your profit is derived after making allowances for everything so that it may not be correct to say that depreciation has been taken twice over.

Mr. Peterson.—Yes.

Mr. Ginwala.—It is perfectly true that in the cost of production you have given, you have included a certain amount of depreciation. But that does not come into the profit and loss account. That will appear there only once. We have therefore now to determine what depreciation will be on a reasonable basis. What do you consider to be a fair percentage?

Mr. Peterson.—It is a matter of taking a margin for risk.

Mr. Ginwala.—The depreciation on mining concessions are very difficult.

Mr. Peterson.—They would be a case of wasting assets.

Mr. Ginwala.—According to your figures your assets are likely to last you from 300 to 400 years.

Mr. Peterson.—But if you take out minerals there is a using of them. Also a quarry may be very difficult to work and you may have to spend a lot of money on it.

Mr. Ginwala.—You cannot say that this is depreciation. For that purpose a very small percentage will be necessary to calculate depreciation on the basis of 300 years. So far as you are concerned these are inexhaustible.

Mr. Peterson.—That might apply to the coal not actually mined. But the plant installed in these is not inexhaustible.

Mr. Ginwala.—I am prepared to agree with that.

Mr. Peterson.—It is very difficult to give an exact theory. Let us take our dolomite quarry which has just been flooded. There are many risks against which you must provide. We must carry some reserve against risks of this kind. Strictly speaking our collieries have not deteriorated. They have gone up in value.

Mr. Ginwala.—You will have to take the life of a thing at a certain number of years. For buildings the usual percentage is 2½ per cent. The life of sanitary works is generally taken at 30 years.

Mr. Peterson.—We are taking 5 per cent. on town and sanitary works. We have taken these percentages from the figures* laid down by the Government of Bombay for income-tax.

Mr. Ginwala.—These are not extravagant rates.

Mr. Peterson.—In the case of refractories we take 7½ per cent. Electric lights—7½ per cent.

Mr. Ginwala.—Prospecting Department. What is this?

Mr. Peterson.—This is a very small item. This is money spent in earlier years on prospecting for minerals.

Mr. Ginwala.—There is no depreciation on that I think.

President. During the last six years it has gone down from 3·3 to 1·2 lakhs.

Mr. Ginwala.—In the case of collieries can you tell us what you paid for the concessions?

Mr. Peterson.—We actually bought these collieries. We have spent a lot of money on machinery development, etc.

Mr. Ginwala.—Works and Construction. Besides machinery you have got big works—buildings and so on. Could you separate these.

Mr. Peterson.—Machinery and plant 7½ per cent. 1·90 crores. Buildings (mostly steel) 5 per cent. 42,900.

The total Works and Construction figure comes to 2·32 crores.

Mr. Ginwala.—Manganese properties. The same principle would apply as collieries. Is there much machinery there?

Mr. Peterson.—There is very little. It is all hand work. I think there is a tram line but I am not certain.

Mr. Ginwala.—Furniture. How much do you allow for that?

Mr. Peterson.—5 per cent. This is all office furniture.

Mr. Ginwala.—What is live and dead stock?

Mr. Peterson.—Live stock is dairy farm. Dead stock is certain motor buses.

Mr. Ginwala.—To arrive at a reasonable figure for depreciation for business purposes would it be fair to take these percentages?

Mr. Peterson.—We have got a statement showing depreciation under each head up to 1st March 1922 including greater extensions.

President.—Are you prepared to put in that statement?

The greater extension I understand were not in operation during 1921-22.

Mr. Peterson.—Part of it was. We shall send you a statement on that. The principal items would be these—

	cost. Rs.
Blast Furnace	38 lakhs.
Machine Shop No. 2	32 lakhs.
Rolling stock	14 lakhs.
Tractors	17 lakhs.

These are the main items but I will give you a statement.

---

* *Vide* Statement No. XIX.

Mr. Ginwala.—I want to ask a few questions about the greater extensions. There we are at a great disadvantage. Forget the fact that you have started the extensions and are operating it. If you were starting them now may I take it as fair that for 5 years they would not be in a position to earn anything.

Mr. Peterson.—5 years would be a very short time. We might expect to be operating in full within seven years.

Mr. Ginwala.—Supposing I want to start work for 300,000 tons will it take 5 years to complete the works?

Mr. Peterson.—You probably could not do it in that time.

Mr. Ginwala.—At any rate you expected to finish them in 5 years?

Mr. Peterson.—We did not succeed in doing so. You might get in a blast furnace in three years.

Mr. Ginwala.—So, in three years nothing would be earned and in the next three years it would gradually begin to increase until within 5 or 6 years they might be able to get into full operation?

Mr. Peterson.—Provided that the necessary railway communications exist.

Mr. Ginwala.—I am taking normal conditions. If you are to start paying your dividends at the end of the sixth year will you write off what you have lost in five years or allow them to remain as they are?

Mr. Peterson.—One method would be to stretch over a certain period the money lost and the other would be to ignore it and raise enough capital to cover it.

Mr. Ginwala.—Supposing you were to spread it over a certain period what period would you fix from the period you started?

Mr. Peterson.—It depends so much on possible profits. In the case of one of the subsidiary companies, we estimate that there will be a certain amount of loss in the first year owing to the fact that the Company is not working fully. That must happen in all cases and instead of writing off the whole of the loss in one year we should spread over 5 to 6 years.

Mr. Ginwala.—Take a plant for three hundred thousand tons a year?

Mr. Peterson.—It would depend on the amount of capital. Let us take a hypothetical case. Probably the capital expended on that would not be less than 20 crores. It would mean a loss of part of the interest on 20 crores for 5 years. That is what you would have to recover.

Mr. Ginwala.—How would you spread it and over how many years?

Mr. Peterson.—It would take 10 to 15 years.

Mr. Ginwala.—The other way is to provide surplus capital by preference shares not carrying interest for a certain number of years. What is the normal term for which without interest you get it in the ordinary market.

Mr. Peterson.—It was spread over four to five years in our own case.

Mr. Ginwala.—What is the proportion of the preference shares to the total capital?

Mr. Peterson.—The second preference shares to which this particular arrangement applies amounts to 7 crores.

Mr. Ginwala.—That is to be deducted from these 10·6 crores that you have given here?

Mr. Peterson.—Yes, that would be deducted.

Mr. Ginwala.—I take it that your loss is for the whole period?

Mr. Peterson.—Yes, except that the money was not brought in all at once and the interest did not run for the whole period. I have given you a statement showing how the money gradually came.

Mr. Ginwala.—As regards the preference shares they will be counted from the expiry of five years.

Mr. Peterson.—They become cumulative from that period.

Mr. Ginwala.—Can you tell us roughly when you will be able to afford to pay.

Mr. Peterson.—I cannot answer that question in public.

Mr. Ginwala.—I do not press that question. Can you just give the amount which you will have to cover in 10 years or so in connection with the greater extensions,—that is the liability you have incurred while the plant is not earning?

Mr. Peterson.—Do you mean the amount of dividends we have to pay? If they can be extracted from the balance sheets there will be no objection.

Mr. Ginwala.—The loss during the period that the plant is not earning some time or other you must recover from your profit by writing it off or by spreading it over 10 or 15 years.

Mr. Peterson.—So long as we can pay our debenture interest and interest on our ordinary capital there will be no actual liability to do so.

President.—But before you can pay the dividends you have to pay preference shares.

Mr. Ginwala.—You have lost a certain amount. You have got to recover it after the extensions came to operation.

Mr. Peterson.—I shall consider the question and give you the information in private. It would be confidential.

सत्यमेव जयते

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. S. K. SAWDAY, recorded at Jamshedpur on the 27th August 1923.

President.—You have given in the statement* about Customs duty a list of the principal articles on which the Company have to pay duty. Do you consider these duties are of importance financially to the Company, that is, does the imposition of these duties in any way handicap the Company?

Mr. Sawday.—So far we have paid mainly on machinery but we are now coming to the end of our purchases of our new plant so the duty on machinery is now of less importance to the Company, but is certainly of importance to the industry as a whole.

President.—Machinery is rather a special case. A very strong opinion has been expressed generally that it is to the interest of India that machinery should be made as cheap as possible, and I think the recommendation of the Committee that sat on it was that the 2½ per cent. duty should be abolished as soon as possible. There is one particular article on which it might be as well to get on record the views of the Company and that is Sulphur.

Mr. Peterson.—In the schedule† we have prepared we recommend that the duty on machinery and sulphur should be removed entirely. We have also suggested that duty should be taken off as compensation from certain articles which are required in connection with machinery and chemicals which are used in the manufacture of sulphate of ammonia, and in the case of special steel we have recommended that the duty should be removed entirely as it is not made in India. This will tend to reduce the charge on the industry.

President.—We are concerned only with the duties the Tata Iron & Steel Company actually have to pay on articles they require for their own business.

Mr. Sawday.—Sulphur is the main thing. We are paying Rs. 25,000 now in duty and when the Greater Extensions come into operation it would mean Rs. 75,000.

President.—Mr. Sawday, you gave evidence before the Fiscal Commission. Could we take the views you expressed in that evidence as the general view of the Tata Iron & Steel Company?

Mr. Sawday.—No. Not generally—but I think you can as regards sulphur.

President.—If these are not the views of the Company then I am quite prepared to have a memorandum from you on sulphur.

Mr. Peterson.—I think the simplest thing would be, if we agree to the views expressed by Mr. Sawday, to reproduce his evidence before the Fiscal Commission. That will leave the matter uncomplicated.

President.—I gather that the latest revision of the tariff has tended to reduce the amount you have to pay as Customs duties?

Mr. Peterson.—Yes.

Mr. Ginwala.—The taxation of the various articles including machinery involves a much larger question than that now under investigation and in order to avoid that difficulty would you not rather suggest that when an industry is protected the articles that are used by that industry as raw materials should receive a rebate from Government? Would that not suit you better?

---

* *Vide* Statement No. XVII.

† Not printed.

Mr. Sawday.—That proposal has been turned down on account of the extraordinary difficulties of allowing rebate without losing a lot of money.

Mr. Ginwala.—I am only concerned with protected industries where the requirements are known and can be verified, and where the Customs authorities will be in a position to say whether they are fair or not. For any article like sulphur which is used by various industries there may be an objection. When an industry is protected it would be a simple thing to put in a claim for rebate. To take your own case there will be no difficulty on the part of the Customs authorities to verify the correct amount of rebate.

Mr. Sawday.—No great difficulty.

Mr. Ginwala.—There is no administrative difficulty in a matter of this kind.

Mr. Peterson.—Whether that would suit us just as well as the removal of duty we are unable to express an opinion.

Mr. Ginwala.—Mr. Sawday, you are in charge of the town as a whole?

Mr. Sawday.—Yes.

Mr. Ginwala.—You are providing accommodation, I take it, for the labour of this place?

Mr. Sawday.—Yes.

Mr. Ginwala.—That accommodation is both for covenanted and uncovenanted labour?

Mr. Sawday.—For all classes.

Mr. Ginwala.—Is there sufficient accommodation for all your employés now?

Mr. Sawday.—No, the accommodation is insufficient. We have 4,500 houses and a staff of 15 thousand men.

Mr. Ginwala.—So, how many houses should you build to accommodate the whole of them?

Mr. Sawday.—I think double that number—including the extensions.

President.—If you double the present number of houses would you be able to house the whole of the labour employed in the works including the extensions?

Mr. Peterson.—Everybody will get a house somewhere.

Mr. Ginwala.—You are charging 5 per cent. on the cost of the house as house rent?

Mr. Sawday.—Yes.

Mr. Ginwala.—What do you charge in respect of the services?

Mr. Sawday.—We do not charge anything.

Mr. Ginwala.—How much do the services cost and what are they?

Mr. Sawday.—The municipal cost of the town is 12 lakhs including interest and depreciation on capital spent. This excludes the cost of housing.

Mr. Ginwala.—That is a recurring charge?

Mr. Sawday.—Yes.

Mr. Ginwala.—That includes hospital, schools, etc.?

Mr. Sawday.—Not the owners' cost on the housing; but the cost of all municipal services including hospitals and schools.

Mr. Ginwala.—You have made provision for schools in this place?

Mr. Sawday.—Yes. We provide a number of schools.

Mr. Ginwala.—That provides facilities for education of most of the children here?

Mr. Sawday.—Yes.

Mr. Ginwala.—Is the service equipment sufficient for the present needs?

Mr. Sawday.—It is very good on the whole as compared with other towns. We still have need of Rs. 7 to Rs. 8 lakhs for drainage and about Rs. 3 lakhs for water.

Mr. Peterson.—I may explain that we have held up our expenditure as far as possible owing to want of money.

Mr. Ginwala.—May I put it to you generally that in determining the wages paid this is taken into account as it is not an extra wage but what you spend practically on services.

Mr. Sawday.—I don't think so. I don't think wages are always lower or that the fact we spend this money is appreciated.

Mr. Ginwala.—May I take it that practically you had to start everything from the beginning on municipal services in order to make the town habitable?

Mr. Sawday.—Yes.

President.—One point is not quite clear. Is the 12 lakhs you mention the gross cost on municipal services or the net cost?

Mr. Sawday.—Net cost after deducting all recoveries but including 7½ per cent. interest and 1 per cent. sinking fund on capital expenditure. This amounts to 7½ lakhs.

President.—In arriving at this figure of 12 lakhs you deduct all recoveries from the town?

Mr. Sawday.—Yes, from markets and so on.

Mr. Kale.—Can you tell me, Mr. Sawday, how many elementary schools there are?

Mr. Sawday.—14.

Mr. Kale.—What is the total number of pupils?

Mr. Sawday.—About 1,200.

Mr. Kale.—Are you aware of a complaint that sufficient provision is not made for the education of the children of the employés in the Works?

Mr. Sawday.—There are certain languages which are unprovided for and which the parents ask us to take up but which we are not able to do. We teach Urdu, Bengali, English, Telegu. Gurmukhi, Gujrati are left.

Mr. Kale.—I realise the language difficulty but will the Company assist people who are desirous of providing their teachers in their own schools?

Mr. Sawday.—Education is left to a School Committee which work under a Board and this Committee always help them. There is a Gurmukhi school here and a school in connection with the mosque. These schools have provided their own teachers.

Mr. Kale.—Don't you think that the number 1,200 is disproportionately small?

Mr. Sawday.—We can accommodate more students but they won't come.

Mr. Kale.—What arrangements do the Company propose to make to see that the children of the employés go to school?

Mr. Sawday.—We arrange for teachers of the lower elementary classes to go round but more children won't come in.

Mr. Kale.—Are you making any efforts to train the children of the employés so that they might become efficient workmen in after life?

Mr. Sawday.—There is a technical evening school where anybody can go to get good training. It is recognized by Government and is inspected by the Government Inspector and helped by Government and they are pleased with it.

Mr. Kale.—Can you tell me the number of students there?

Mr. Sawday.—There are 270 on the rolls, owing to a large number of men being shift men the average attendance is not very high. About 35 per cent.

Mr. Kale.—Don't you think that more can be done and should be done in this direction, namely, to give practical training to the children of the employés so that they might be induced to stay here?

Mr. Sawday.—The Government of Bihar and Orissa have taken up the question of opening a technical school here with special arrangements for the Bihar and Orissa boys.

Mr. Kale.—But what is the Company going to do?

Mr. Sawday.—I can tell you, Professor Kale, that the Tata Iron & Steel Company has done more for the cause of education than any other place in Bihar and Orissa.

Mr. Kale.—I think the people of Bihar and Orissa are in this respect far behind other Provinces.

Mr. Peterson.—May I put it this way that the Company cannot at present afford to spend more money on education.

Mr. Kale.—I understand that, but is it not desirable to do much more than the Company is doing, in its own interest, namely that it should train the children of its employés in such a way that they will ultimately remain here. That will be to the benefit of the Company.

Mr. Peterson.—That is always our declared policy but at present we are unable to carry it out.

Mr. Kale.—Is there any truth in the complaint that there is not sufficient accommodation for the men here?

Mr. Sawday.—There is a good deal of truth in it. The Company has spent Rs. 70 lakhs on housing and we want 70 lakhs more for the purpose to meet the full demand. But we are unable to find this sum.

Mr. Kale.—Is it not a serious difficulty that employés should not get houses?

Mr. Sawday.—Yes, but the Company on the other hand is prepared to loan money on 3 per cent. to any of its workmen to build houses. Of the mistry class, about 600 have taken advantage of the offer.

Mr. Kale.—Will it not be better for the Company to build more houses so that the men will remain here longer so that there will be greater efficiency than there is at the present moment?

Mr. Sawday.—We have cut other expenses to build houses.

Mr. Ginwala.—I take it that in your municipal services you employ mostly Indians.

Mr. Sawday.—Almost entirely.

Mr. Ginwala.—May I take it that it applies also to your general administrative services?

Mr. Peterson.—That will be the policy, but there are no general administrative services. Apart from experts, they are practically all Indian. The actual cost of the Bombay office is paid by the Company. That is all Indian, except myself, I think!

Mr. Kale.—How much do you spend for your welfare work now?

Mr. Sawday.—Rs. 26,000 on gardens and trees; Rs. 2,00,000 on hospitals; Rs. 50,000 on education; Rs. 30,000 on the farm; Rs. 22,000 on band; Rs. 1,200 on co-operative societies.

Mr. Kale.—Are the co-operative societies doing good work?

Mr. Sawday.—Yes, they are flourishing.

Mr. Kale.—How many members are there in your co-operative societies?

Mr. Sawday.—Up to 31st May 1922, 2,111 members and it will probably increase by 50 per cent. for the year 1923. The subscribed capital is Rs. 1,20,000. Amount of loans will be in the neighbourhood of 4 lakhs.

Mr. Kale.—Is there any tendency for the societies to grow?

Mr. Sawday.—Yes and I think they will grow more flourishing still. They often pay 9, 10 or 11 per cent.

Mr. Kale.—Have you been carrying on the welfare work as you did in the past?

Mr. Sawday.- We have cut down the grain stores and the cloth stores. These were dropped as they were no longer necessary. There were no sales.

Mr. Kale.—Is there any other kind of work which you are doing that can be called welfare work?

Mr. Sawday.—Yes, looking after sick people, looking after beggars, sending boys to the orphanage at Calcutta and so on.

Mr. Kale.—Do you think the prices in Jamshedpur higher than in other places in Bihar?-

Mr. Sawday.—They are slightly lower than Calcutta and slightly higher than Kharagpur. Prices of grain are lower; price of meat is very low, vegetables brought in by the junglis are sold very cheap, and what is more surprising, the price of fish is indeed lower than in Calcutta.

Mr. Kale.—This question of prices affects the real wages of workmen and from that point of view I would like to know how the prices compare with other parts of Bihar.

Mr. Sawday.—We do not keep the index number; we get them from the Director of Industries.

President.—Of course the Tata Iron & Steel Company cannot compile index number for the whole of Bihar and Orissa, but the local Director of the Industries Department is soon going to publish them.

Mr. Peterson.—There is one point I should like to clear up on the question of depreciation and profit. I think in dealing with the question I was considerably confused as to the points to which your questions were directed. After reading the record of evidence I would alter my answer. I entirely agree with the President that if a full allowance for depreciation is made in the costing accounts, any sums set aside for real depreciation should not be taken into account in estimating the capital on which profit should be calculated as this has already been allowed for in the cost.

President.—I think we have come to an understanding now. But that again raises this question. Looking at the matter from this point of view do you still think that the sums you have allowed for depreciation in your cost statements during the last few years, were proper sums to allow?

Mr. Peterson.—If the Board wish to examine me on this point which raises important questions of profit and loss and of the finances of the company, I am quite prepared to answer any questions but I am not prepared that these facts should be stated in public.

President.—We shall put it off till we examine you at a later date.

Now, looking at the balance sheet for 1921-22, I notice that the item collieries has gone up considerably during the last few years.

Mr. Peterson.—There have been large developments in the collieries.

President.—May I take it that had the greater extensions not been contemplated part of the expenditure on the collieries would probably not have been incurred?

Mr. Peterson.—That is a very difficult question to answer. The best thing would be to answer the question in this way that had not the greater extensions been contemplated some of these collieries might not have been purchased. But it is difficult to say to what extent the expenditure on collieries was due to the development of the greater extensions, because before the scheme for the extensions had taken final shape the Company had decided to buy collieries to protect itself against any scarcity of coal. Apart from this the collieries can earn profits apart from their supply to the Company. Whether that was accurately related to the actual scheme of the extensions as it exists at present it would be impossible to say. The extensions scheme has altered so very much during the actual construction—parts have been added and parts have been taken away so that I do not think that it can be said that the exact amount of coal purchased bears any exact relation to the schemes contemplated from time to time. The collieries were bought at the time on favourable terms.

President.—But had there been no extensions in contemplation?

Mr. Peterson.—We would not have purchased so much coal.

President.—I take it that it is extremely difficult to say how much of these collieries was a part of the scheme of the greater extensions?

Mr. Peterson.—It is a very difficult question to answer: you mean the part of the extensions shown in the balance sheet?

President.—What I am really trying to get at is the question of capital.

Mr. Peterson.—The collieries would earn a part of the profits. They would be earning a fair profit now if the actual market price were charged to the works.

President.—My point is this. As long as you charge only the actual cost to the works for the coal supplied any profit on the capital invested in the collieries has got to come out of the general profits of the Company.

Mr. Peterson.—That is how we have shown it up to the present.

President.—I gather from what Mr. Sawday told us that the expenditure on the town buildings would have been incurred even apart from the question of extensions?

Mr. Peterson.—So far as the quarters of the workmen are concerned—yes, but in so far as the covenanted staff is concerned there has probably been an increase in order to provide for the new staff on the greater extensions.

President.—Let us take the next item—Town Sanitary Works. I imagine that they have been planned to be sufficient for the population expected when the extensions have been completed.

Mr. Peterson.—Planned to be sufficient for the population that might be expected in 20 to 30 years and also for the increase that might result from our own extensions and that are likely to result from the establishment of subordinate industries.

Mr. Ginwala.—With regard to the collieries is it not a fact that by having obtained these collieries you have been able to reduce the total cost of coal as it is used at present?

Mr. Peterson.—Yes, by obtaining these collieries the Company was able to reduce its expenditure because had we not possessed them the works would have been closed four or five times during the past few years as a result of strikes and the difficulties of transport. Apart from the greater extensions these collieries have proved to be necessary if we were to carry on manufacture.

Mr. Ginwala.—My point is this. You entered into long term contracts for coal. That has turned out to be unfortunate and for that reason you purchased your collieries from which you get 40 per cent. of your coal?

Mr. Peterson.—We really purchased these collieries for this reason that our contracts for coal extended over a period of 25 years and after that period we would have to pay any price for good coal had we not possessed our own coal.

Mr. Ginwala.—With regard to this capital question what I would like you to look at is this. Suppose you are constructing a 1,30,000 ton steel plant to-day. Could you erect it for less than the capital you spent on it?

Mr. Peterson.—The old block would cost us to-day double what is shown in our books.

Mr. Ginwala.—Therefore may I take it that even if you write-off from year to year depreciation on your plant it would still retain its original value.

Mr. Peterson.—I should say so.

Mr. Ginwala.—That is to say, if you take an actuarial valuation for your old plant, it would stand at more or less the same price?

Mr. Peterson.—I should say it would be considerably higher; I should put 50 per cent. on to the actual value shown.

Mr. Ginwala.—Take "**Machinery.**"

Mr. Peterson.—Some of the machinery would probably stand at a lower value, while some of the old machinery cannot be replaced at anything like the original cost.

I will take one instance. The first Blast Furnace was put up for Rs. 12 lakhs. This would now cost us about 36 lakhs. Taking it all round I should say that the entire value of the undertaking would be worth 50 per cent. more than our original cost.

Mr. Ginwala.—With regard to depreciation if you add to the works cost the actual depreciation apart from a hypothetical depreciation we will get the correct figure on the basis of that calculation.

Mr. Peterson.—That would be a reasonable estimate.

Mr. Ginwala.—For works cost you take interest charges and various other charges?

Mr. Peterson.—Yes.

Mr. Ginwala.—According to my idea this method of calculation would be simpler.

Mr. Peterson.—We have tried to put it in the simplest way.

Mr. Ginwala.—I think we have given you a rather elaborate letter. When you get that you will find in that an item for depreciation and so far as I am concerned, I am inclined to calculate upon the basis I have explained to you, and you would, I think, find that a reasonable one from your point of view.

***Mr. Peterson.*—Yes.**

Mr. Kale.—Does not depreciation vary with the profits made from year to year? What is the general practice?

Mr. Peterson.—It depends on how much we earn.

Mr. Kale.—In the earlier years in a Company's life it might be possible to provide only a smaller amount for depreciation.

Mr. Peterson.—In prosperous times we allow a larger amount for depreciation.

Mr. Kale.—Would it not be better in the present circumstances to take a smaller figure for depreciation. What figure would you suggest?

Mr. Peterson.—I think that will depend not on our figure but on the total cost at which other persons starting this industry in this country could afford to manufacture.

Mr. Kale.—We are trying to ascertain what would be the reasonable price of steel.

Mr. Peterson.—In estimating its cost I think one might fairly take the ordinary standard of depreciation for purposes of income tax, or for commercial purposes.

Mr. Ginwala.—I wish depreciation depended on profits always.

Mr. Kale.—Generally you take depreciation as deduction from the net profits. In your profit and loss account you appropriate a certain amount for depreciation, so that if the profits are higher the depreciation is shown at a higher figure for that particular year.

Mr. Peterson.—It may be; it depends on the circumstances of the Company.

Mr. Kale.—You told me the other day that the agreement with the Tinplate Company does not affect your position so far as your supply of steel is concerned.

Mr. Peterson.—We have not surrendered any duty in that agreement.

Mr. Kale. What you have done in the agreement is that you take the f.o.b., Swansea price of steel as your provisional price.

Mr. Peterson.—The agreement is a little complicated. The Tinplate Company are under the impression that they are very badly hit by the agreement while we think that we are badly hit. So far as this is concerned any duty is not surrendered because eventually the price will depend on the price of foreign tinplates landed in this country and if steel is protected plates made from it will also be protected.

Mr. Kale.—You have to sell your steel to the Tinplate Company at a price which is not remunerative to you?

Mr. Peterson.—That would depend on the price of foreign tinplates. The provisional price is altered afterwards.

Mr. Kale.—But the price is not modified to the full extent. You will get only one half.

Mr. Peterson.—As I say the agreement is very complicated. We do not get half the difference in price but half the difference of the profits.

Mr. Kale.—So that one cannot say that you will benefit. On the contrary, I say that in certain cases you will have to accept a lower price.

Mr. Peterson.—The steel bars we supply to the Tinplate Company are not of the same quality as finished steel and cost less to the manufacturer. In the manufacture of tin bars we can use steel which we could not use for other products which is a great advantage to us as Mr. Tutwiler explained. Our expert staff at present does not think that once the Tinplate Company begin to run at full pressure, this contract should prove unprofitable. You must not compare the cost of finished steel with that of the tin bars supplied to this Company.

Mr. Kale.—I am comparing your price of tin bars with the price of tin bars in England. That will determine the provisional price.

President.—Mr. Kale's point is this. The basis of the whole thing is the provisional price.

Mr. Peterson.—I don't think so. The basis of the whole thing is the price of tinplates imported into this country.

Mr. Kale.—I have read the agreement and I don't find it there.

Mr. Peterson.—That is how I have read it. The tabulated statement* is my understanding of the agreement.

President.—As I understand it, in the first instance a sum equivalent to the f.o.b. price Swansea is paid by the Tinplate Company to the Tata Iron and Steel Company; subsequently the latter Company may receive an addition to that price or may have to return part of what it has already received. I think Mr. Kale's point is that you may benefit by protection to the extent of the addition, but as regards this initial payment any protection which is given by means of an enhanced tariff would not be of benefit to you.

Mr. Peterson.—The provisional price is nothing but a *pro formâ* price.

President.—One of the notes† you have put in deals with a question that gave us some trouble,—the measures to be taken to deal with countries with depreciated currencies. I gather that the proposal put at the previous meeting has been dropped and you now propose what you consider a simpler solution.

Mr. Ginwala.—I have had a hurried look into this note. As far as I can gather you propose that if there is variaton in the price owing to depreciated exchange you would like to take the English price as the basic price.

---

* *Vide* Statement No. IV.
† *Vide* Statement No. VI.

Mr. Peterson.—I would take as basis the price in a country where the exchange is stable, such as England. America would do equally well.

Mr. Ginwala.—That necessitates an enquiry into the English prices from time to time. Would it not be better if instead of adopting the English price at a particular period you had the alternative of determining the price in this country prevailing at the moment? It is much easier for us to obtain the information at what price a particular imported article is being sold at a particular time.

Mr. Peterson.—I think it would probably be more difficult to ascertain the average market price in India than to ascertain the average market price in England. The English c.i.f. price can be obtained with absolute accuracy. We have been doing it for many years and basing our contract prices on it.

Mr. Ginwala.—It is not so easy as you think. In America they have got an elaborate machinery to arrive at a reasonable price at which the locally manufactured article can be sold at a particular moment in the country.

Mr. Peterson.—There is one difficulty. Would you take it for a particular port or a particular place.

Mr. Ginwala.—In America they take New York and they know that steel at a particular moment was quoted at a particular price.

Mr. Peterson.—We could take Calcutta as that is the biggest importing centre in India.

Mr. Ginwala.—We may take a reasonable market price and then can increase the duty by £10, 5 or 2 as the case may be.

Mr. Peterson.—What standard of steel would you take in fixing the price?

Mr. Ginwala.—We may take the English specification.

Mr. Peterson.—Much steel of similar specification comes into this country from Belgium and other countries.

Mr. Ginwala.—Once the article is here you know its selling price.

Mr. Peterson.—In a particular quarter your average price would be reduced by the low price of steel coming from a country with a depreciated exchange which might be very low.

Mr. Ginwala.—It cuts both ways.

Mr. Peterson.—It is not likely to cut the other way just at present. If you take the price of English steel and the price can be ascertained more easily in this country, I can see no objection to that.

President.—In the first place you would apply this only to protected articles?

Mr. Peterson.—Yes.

President.—Would it not follow that in the case of a protected article no country in the world would ever undersell Great Britain?

Mr. Peterson.—It would tend towards that until the continental exchanges became normal.

President.—Subject to the limit of competition and subject also to the danger of reducing their market.

Mr. Peterson.—That would practically follow: the country in question could not raise the price, she could reduce it. If in the first quarter of the year the price is £10 and in the second quarter it went up to £15, a foreign competitor might import at £10 without extra duty on account of depreciated exchange.

President.—They might be able to work it up by a few shillings to the ton.

Mr. Peterson.—It would be quite possible to take the mean between the English and American prices. You would have direct competition from America if there was an attempt to raise the price artificially.

President.—It would prevent any other country which was favourably situated and could afford to sell at a lower price from sending steel into India at that lower price.

Mr. Peterson.—You would still get competition. If there is any endeavour to raise the price artificially they could not raise it at once unless they came to an agreement amongst themselves.

Mr. Kale.—Is it your opinion that the scheme you have now put forward has this advantage, namely that you know what it costs the Belgian works to manufacture a ton of steel in their own currency, but you want to neutralize the effect of the depreciation of the currency and want to bring the price up to the level at which you sell here and you take the English price because you feel that the exchange there is steady.

Mr. Peterson.—That is the reason.

Mr. Kale.—This is the advantage that the present scheme has over the one you propounded the other day.

Mr. Peterson.—With the exchange fluctuating as it does fluctuate and depreciating as it is depreciating, it is impossible to work out any scale that would work automatically. Any plan that works automatically is very much easier for trade generally than any plan imposed by an enquiry *ad hoc*. And we think this the simplest, every one will know the rate of duty.

Mr. Ginwala.—From your point of view it is not material whether the prices in England and America are controlled by the English manufacturer on account of the scheme?

Mr. Peterson.—I do not think there is any possibility of effective control against this country. If there is any possibility of such control between the manufacturers, we would in any case get it in spite of any provision to the contrary.

Mr. Ginwala.—I am afraid I did not make my point quite clear. What I meant was: you yourself now manufacture steel and you have a selling price in the country. We take it you make a reasonable profit on your cost?

Mr. Peterson.—Our selling price must for a very long period until we produce steel here for export be based on the world price even after protection is given.

Mr. Ginwala.—Would it not be simpler to determine the price of the foreign imported article with reference to your own price?

Mr. Peterson.—It will be the same thing. Their price and ours will be the same except that ours will be a little lower.

Mr. Ginwala.—From the administrative point of view it would be very much simpler if the general principle was that an additional duty equivalent to the difference between the imported price of the article in this country and your selling price were imposed.

Mr. Peterson.—As a general principle that would be sound enough but it would depend on how great the depreciation in exchange is. If you take the selling price when intensive dumping is going on then steel might be coming into this country at so low a rate as to put your average price very low.

Mr. Ginwala.—If you get protection, that protection, I assume, ought to be enough to prevent foreign goods competing against you in your own country. On that assumption would it not be simpler to take your price as the basis.

Mr. Peterson.—Probably it would work in a different way in practice.

Mr. Ginwala.—In America this is being done, but there of course they have the United States Steel Corporation which determines the world's price.

President.—I think we have asked Mr. Peterson to put up a statement* showing the current c.i.f. price, and also the company's selling price with a list of the extras.

Mr. Peterson.—I wish to explain the principle on which I have made certain alterations in the Tariff schedule†. I have made no alteration until we get to page 4 of the existing Tariff schedule.

Page 4—Mineral oils.

I have suggested that all lubricating oils should be free.

Page 8—Chemicals.

I have suggested that sulphur should be free and have added sodium nitrate which is used in the manufacture of sulphate of ammonia. At present it comes under "Chemical products not otherwise specified." Speaking generally where an article is made from steel in this country a compensating duty equal to the increased cost caused by the increased duty on steel and iron should be imposed. We are not in a position to give the exact amount of such increased costs which will have to be ascertained from manufacturers of that article, and we have indicated such articles in the tariff with a cross (*).

Page 9, item No. 69.

This will contain many articles of the class mentioned above.

Item 75—Hardware.

The same question might arise here.

Item 80—Cutlery, etc.;

The same question might arise in this case also.

There may be manufacturers of instruments who use Indian steel who might be handicapped.

Item No. 87—Machinery.

This should be free. On the general question of iron and steel we think it advisable to make as few alterations in the existing tariff as possible. Any alteration in the description or specifications in the existing tariff will be a matter for considerable discussion. It is very much simpler to accept the existing description for the present and for the first year or so to await the results of actual experience before any changes are made. Therefore we advocate a specific duty at 33⅓ per cent. of the existing tariff valuation and where articles are valued *ad valorem* the rates of duty should be increased. We consider that the duty on wrought iron should be 20 per cent. if a duty of 33⅓ per cent. is imposed on steel. If you put a heavy duty on steel the duty on wrought iron should be increased. In the case of iron where the tariff valuation is put as 230 we have suggested a specific duty of Rs. 46 a ton. In the same way in the case of steel we have accepted the duty according to the existing tariff valuation and have multiplied it by 3. In the case of articles valued *ad valorem*, such as rails, chairs, sleepers, etc., we have merely suggested an increase in the duty of 33⅓ per cent. In the case of articles that are not manufactured in this country, such things as anchors, cables, etc., we have made no alterations at all. In the case of special steel such as carbon steel, high tensile steel, cast steel, etc., we have suggested that they should come in free and we suggest that the present duty should be taken off. We have marked all articles we do not manufacture ourselves but which can be manufactured from steel in this country and have suggested that the manufacturers of those articles should be examined and asked what the effect on their manufacture would be. In the case of metals other than iron and steel, aluminium should come in free because it cannot be produced in this country. Brass should be admitted free. White metal required for bearings which is not manufactured in this country should be admitted free. We have also suggested that zinc should be admitted free. It is not manufactured in this country but is required in large quantities for the manufacture of galvanized sheets. The only other point in which we have made any alteration is the rolling stock. We have treated that exactly in the same way and we have marked the items which we manufacture, articles which can be manufactured or are being manufactured from our steel and have suggested that the same duty should be placed on it as in the case of other steel.

---

* *Vide* Statement No. VII.

† Not printed.

President.—While all the proposals you have made for removal of duties from things that might be classed as raw materials will come up for consideration sooner or later, it is possible that we may not be able to deal with them in connection with steel because they might have a bearing on other industries which have not been examined.

Mr. Peterson.—I think the particular articles I have mentioned do actually affect the manufacture of steel. There may be other considerations of which we may be unaware.

President.—There is one more point which has not been mentioned and which occurred to me recently. What would be the opinion of the Tata Iron & Steel Co., on the proposal to remove the duty on pig iron. Such a proposal would naturally be put forward on behalf of iron or steel manufacturers of some kind in this country. Would it affect the Tata Company much one way or the other?

Mr. Peterson.—Very little. The import of pig iron into this country would be very small. Probably there are imports into special ports which are handicapped by their distance from the producing centres.

President.—I take it that the bulk of your production of pig iron which is sold as such is exported?

Mr. Peterson.—A large majority of it. Our sales in this country would be about 50,000 tons, but the exports from India would be very much larger than the imports. Import of pig iron in 1922-23 was 12,000 tons. I do not think that the removal of the duty will have any effect one way or the other.

President.—Please look at the statement* showing the current c.i.f. price, your selling price and the cost price. It is not clear how, if English steel is coming in at Rs. 151-14, you can obtain Rs. 168?

Mr. Peterson.—It is coming in at Rs. 151-14, that is c.i.f. Calcutta without duty.

President.—Will you kindly look at page 8 of your Supplementary printed memorandum on the Protection of young industries; you say, quoting Professor Taussig, "It would be hazardous to reckon how far the tariff system in keeping up the price of rails brought a burden on the general public, and how far it simply lessened the profit or increased the losses of railway promoters and investors." That would hardly apply—would it—to this country, where nearly all the railways are State owned.

Mr. Peterson.—I merely quoted that in order to show that it was extremely difficult to ascertain on what particular class or community the burden would fall. It may be distributed very differently than was expected.

President.—In this case it is not the Railway promoter or investor but the Indian taxpayer who must bear the burden and I am afraid he cannot pass it on to anybody else.

Mr. Peterson.—The argument there would be that possibly the increased cost would be distributed very widely and would not fall entirely on railway freight.

President.—If it is not borne by the taxpayer, it must mean increased freight charges.

---

* *Vide* Statement No. VII.

Now look at page 14 " Moreover, at its doors are the large and constantly growing markets of the far East where already Indian pig iron has opened a large and increasing export trade." Are you referring to markets for steel?

Mr. Peterson.—I can only give you our experience. We constantly receive enquiries from engineering firms in places like Singapore, Penang, Java, Australia, New Zealand and the west coast of America for steel. I believe that nearly one million tons of steel is consumed in the far East in the shape of kerosine tins alone.

President.—Does not that fact suggest that there are other markets beside India to which the foreign manufacturer can go and dump their steel? I suggest to you that your statement on the other point that India is the only market open to dumping is overstating the case a little?

Mr. Peterson.—Owing, I think, to the development of transport between India and other parts of the world for the export of grains, raw materials, etc., there is a cheap freight to India. Whether the same conditions exist in those other places I have no knowledge. They have also protective duties in many of these countries. In that sentence I am looking to a period 20 years ahead.

President.—On page 16 of the pamphlet you say " Bounties and freight concessions have been granted in some countries for export trade." When we had this matter up before you told us that the only definite instance you could give was the Belgian rebate of 30 francs a ton on certain raw materials.

Mr. Peterson.—I have since received a subsequent confidential report from England, dated 11th January. It runs as follows:—" I have recently had confirmed from quite a reliable source that for some considerable time past the Belgian Government had been giving substantial subsidies to their steel works for export trade. Thus at last we find the reason why the Belgian prices have been so low for many months past, which basis of price has of course in turn had a corresponding effect on other continental sources of supply as well as quotations from this country. This is the reason for the extraordinarily cheap price in English and Belgian markets." Information like this you cannot prove.

President.—Is that all the information you have?

Mr. Peterson.—We believe there are freight concessions. Freights have been reduced for export trade in France. We suspect that is what is happening in Germany. We know that the freight from Hamburg to India is suspiciously low. Whether this is a result of the depreciated exchange or competition or an indirect subsidy we have no information. We know it is much lower than the freights from England.

President.—You have made rather a definite statement there that bounties and trade concessions have been granted in some countries. I wished to be clear as to exactly what you meant. You say later on page 21 " Direct bounties for export can be proved easily enough, but it is impossible to prove accurately the indirect concessions and advantages which we have indicated."

Mr. Peterson.—I have said that we cannot prove these. We have a definite statement that the freight rates for export have been very much reduced in France. We have no exact proof of the actual extent of these bounties. I shall put in this further statement. It is an extract from a letter which was forwarded to the Government of India on the 11th of January and a copy was sent to the Member for Commerce on the 20th of January.

Mr. Ginwala.—With regard to these bounties it seems unusual that you have not been able to get more authentic information. The question must have been discussed by the Legislature before any legislation authorizing bounties was enacted. In Australia for instance there are the usual official reports of proceedings. It seems rather strange that you should not be able to procure Belgian Reports of Legislative Proceedings. In a democratic country they cannot have secrets like this.

Mr. Peterson.—We have no representatives in these countries.

Mr. Ginwala.—Perhaps later you will be able to give more authentic information.

Mr. Peterson.—I suggest that you write to the Consults in various countries and ask them whether the information is correct.

President.—There is a Consular report on the economic conditions of Belgium. There is no indication of this in the report.

Mr. Peterson.—This is the information we have got. It may be right or it may be wrong.

President.—It is for the people who put this note to make a *primâ facie* case. We can hardly ask the Government to make an enquiry.

Mr. Peterson.—I am not pressing the question of bounty at all.

Mr. Ginwala.—Steel is being landed at a price at which it cannot be obtained in any country. What are the causes, known or unknown, which bring about this result. It is sufficient to say that the Belgian steel can be had in India at £7 whether any country has sold it at that price or whether they have special facilities, etc., it is immaterial for practical purposes.

President.—I only alluded to it to-day because I consider it hardly fair to let that statement pass without authentic proof.

Mr. Kale.—I want to put one or two questions with regard to cost price and sale price. We have so far considered the cost price and you have given it at Rs. 186 a ton, but after all, it is the selling price that we shall have to consider—a price at which you will be able to sell and the difference between that price and the price at which articles will be landed in this country. What amount would you add to the cost you have given in order to arrive at a fair selling price?

Mr. Ginwala.—That is what we are trying to work out.

Mr. Kale.—That is not it; you have not understood me. It is not the amount of protection that I am speaking of. You have already proposed that protection should be 33⅓ per cent. Suppose you add that to £10 which is the price of the imported article. From the figures you have given us it seems that the price so obtained will not give you the selling price you require. Suppose it became Rs. 200; the cost you give is Rs. 186.

Mr. Peterson.—That is an exceptionally high cost. We have given the actual cost but it is exceptionally high.

Mr. Kale.—I want to know whether the difference between the two will be sufficient to give a fair profit on the existing capital?

President.—Would you consider Rs. 14 a ton sufficient to give you a reasonable profit on the company's capital or do you expect that you will be able to reduce the manufacturing cost substantially below the present figure?

Mr. Peterson.—We hope to reduce the cost. The new plant will be in full operation in 6 months and costs will come down.

Mr. Kale.—If that is so what will be the additions that you will have to make to the cost?

President.—There will be no addition per ton. Whether the cost will be higher or lower it is impossible to say.

Mr. Kale.—You expect to turn out 4½ lakhs of tons. What will be the additional charge that will have to be met for your depreciation and for your interest and so on? These additional charges will have to be spread over the cost of production.

Mr. Peterson.—If the Board will put in writing the exact form in which they want the information, we will send in a statement.

Mr. Kale.—I want an estimate of what will be the working cost per ton of steel taking into account depreciation, interests, etc., when the whole of the plant including the greater extensions is in operation.

Mr. Peterson.—If the greater extensions had not been erected the case for protection would be very much weaker, and it is really on the strength of the increased production that we are asking for this protection. I understand that the question before the Board is to ascertain what the fair cost of steel will be. The real difficulty about making a comparison is this; we had barely started before the war. During the war we obtained great facilities in the matter of traffic, we had no difficulty in disposing of our output which was taken by Government. Between 1914—18 it is very difficult to find a normal year. Control was taken off by Government in 1920 and after that we had labour trouble.

President.—I think 1921-22 would be the best. It was least affected by outside causes. Since August 1914 there has not been a normal year.

Mr. Peterson.—1920-21 began with the after effects of the big strike, and there was a minor strike of the covenanted hands. In 1921-22 there was also the strike on the East Indian Railway and there was shortage of wagons. In that year unfortunately our accounts were made up for three months and nine months distinguishing the period when the preference shares began to earn and the period when they did not earn. If I may offer an opinion the most accurate way of arriving at that figure would be to take as Professor Kale takes, the estimate for the greater extensions when completed and check that with the actual figures in the past.

President.—Undoubtedly; but it won't do to undervalue the evidence of the past. After all the estimates of the future can be no better than a surmise.

Mr. Kale.—The Company is asking for protection for a prolonged period so we want to know what the position will be in the near future.

Mr. Peterson.—The duty can be altered at any time the Government consider it necessary. The Company has never expressed an opinion as to the exact period.

President.—It would be open to the legislature to legislate for protective duties, in such a way that they would not require annual enactment in the tariff schedules.

Mr. Ginwala.—The Legislative Assembly cannot initiate any legislation which is likely to affect the finances of the country; the Government can of course do it at any time.

Mr. Peterson.—I should like to express this opinion on behalf of the Company. The object of a policy of protection is to increase and develop the manufacture of steel in this country not the manufacture of steel by this Company. If you put protection for a shorter period than anything between 5 to 10 years that would not have that effect. If it was known that the actual protection granted was for five years only and that after this the industry would not require protection, then no one else would come forward to start.

President.—It would cut both ways. On the other hand it rather suggests that it ought to be taken off at the end of a certain period.

Mr. Peterson.—In granting protection for the development of the steel industry it must be understood that this is the aim of the policy and so long as that aim is to be fulfilled protection will be maintained. Obviously no manufacturer will start if he knows that protection will be removed in say 5 years as he will know that we cannot manufacture on a large scale within that period.

Mr Ginwala.—That is a strong argument against a definite period.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E. representing the Tata Iron and Steel Company, Limited, recorded at Jamshedpur on the 14th December 1903.

President.—I think we might begin to-day with the question of the working capital required when the Greater Extensions are in full operation. Perhaps the best way in which we can put it is that your outturn will be roughly 400,000 tons of finished steel?

Mr. Peterson.—Yes.

President.—The works cost we have taken very roughly at Rs. 125 a ton which gives a total of 5 crores for the total outturn. Therefore, if you require 5 crores of rupees as your working capital, it means roughly that that an interval of one year elapses between the time when you incur the expenditure in making your steel and the time when you receive payment. That seems to be a very difficult proposition to understand.

Mr. Peterson.—Perhaps I may explain exactly what we have taken in arriving at the working capital. We think the simplest way of arriving at that is to take the present working capital and increase it proportionately to the increase in production.

President.—That is not taken from the balance sheet?

Mr. Peterson.—These figures are taken from our statement of liquid assets given to the Imperial Bank. This is all included in the cash credit except two items, stocks and stores at mines and collieries and outstandings, first because of the difficulty of putting these stocks and stores at the collieries into the possession of the bank, and secondly because of the difficulty in putting the Bank in possession of the outstandings.

President.—What do you mean by outstandings?

Mr. Peterson.—Bills due to us.

President.—Would that come under book debts in the balance sheet?

Mr. Peterson.—Yes. That is money actually due for material supplied that has not yet been paid for, that is what it really is.

President.—What you have sold but have not been paid for?

Mr. Peterson.—Yes. We roughly estimate our working capital after the Greater Extensions are completed as follows:—

Spare Rolls		50 lakhs.
Spare ingot moulds, etc.		10 „
Stores (Electrical and main, etc.)		70,00,000.
Operation spares and loose tools		50,00,000.
Bricks		30,00,000.
Raw Materials:—		
Coal	20 lakhs.	
Iron and manganese ore	10 „	
Lime-tone	5 „	
Sulphur scrap and others	10 „	
		45,00,000
Colliery stores and stocks, outstanding		35 00,000
Outstandings (Jamshedpur)		80,00,000
Stocks of finished products		1,10,00,000 (We estimate one month's finished products will have cost us Rs. 55·5 lakhs.)
		Rs. 4,80,00,000

For purposes of comparison, we give below a similar statement of our existing working capital :—

Spare rolls	13 lakhs.
Spare ingot moulds, etc.	2 ,,
Stores	35 ,,
Operation spares and loose tools	4 ,,
Bricks	26 ,,
Coal	9 ,,
Iron and manganese ore	11 ,,
Dolomite and limestone	3 ,,
Sulphur, scrap, etc.	5 ,,
Collieries, stock and stores, outstandings	25 ,,
Outstandings (Jemshedpur)	36 ,,
Stocks	56 ,,

Some of these items may come down.

President.—Let us take it on these lines. 9 lakhs of coal, that is at Jamshedpur, isn't it?

Mr. Peterson.—This is coal held at the Works.

President.—It must be roughly somewhere in the neighbourhood of 100,000 tons at Rs. 9 a ton?

Mr. Peterson.—Steam coal about 10 lakhs and gas coal 1¾ lakhs held at the Works.

President.—Do you find it necessary to hold stocks at the Works?

Mr. Peterson.—We have not really got enough stock at the Works.

Mr. Ginwala.—That is about six weeks stock?

Mr. Peterson.—That is about it. We shall keep stocks for 3 months, if we can.

President.—You don't hold stocks at the collieries?

Mr. Peterson.—We have large stocks at the collieries, but we would not hold them there if we could help it.

President.—That depends to a large extent on railway conditions?

Mr. Peterson.—And partly on the market. There are certain classes of coal which are being raised at present which cannot be sold and accumulate there.

President.—You mean the coal you buy?

Mr. Peterson.—Yes.

President.—Must you carry stocks for them so to speak?

Mr. Peterson.—80 per cent. of the value of the coal raised we pay for. We cannot get rid of some of the bought coal. It is accumulated at the collieries. We take practically the whole of their output.

President.—They say that they have to hold stocks at the collieries for other people; that is what we heard from the other side at Calcutta. Of course, they did not say that about the Tata Co.

Mr. Peterson.—We don't want to hold any stocks at the collieries.

President.—Is there any possibility of your reducing these?

Mr. Peterson.—I should say so. Of course, we are trying to reduce them as far as possible.

President.—There is no object to be gained so far as you are concerned by holding stocks at the collieries?

Mr. Peterson.—No.

President.—Is there any possibility of the working capital going down?

Mr. Peterson.—It might perhaps go down to, say 4 crores, but I would not like to promise that it would. On spare rolls we would be at a disadvantage. In a plant in America or in England they would not carry anything like this stock of rolls. This would be unproductive capital locked up. We shall probably make our own rolls in future. If we can do that and make them with success we would not need to carry so large a stock.

President.—Before we go on to this question of rolls, can you tell us whether you make any rolls at present?

Mr. Peterson.—We are making none of the chilled rolls just now. We are at present contemplating getting one of the big English roll makers to come out here and make them for us. We had negotiations with an American Company to come out but the arrangement fell through, and we are just now contemplating asking the English roll makers to come out to this country and make rolls from our material. That would save a great deal in freight and save us from holding these large stocks. If they agree to come out then we would probably make all the rolls in our Works.

President.—You have got 13 lakhs of rupees locked up in spare rolls at present. How long will it take to work off that? How much do you spend in rolls in a year? All I really want to get at is how long would Rs. 13 lakhs worth of rolls last?

Mr. Peterson.—It depends very much on breakages.

President.—I thought that possibly your annual expenditure on rolls would give us a sort of clue.

Mr. Peterson.—I will look it up and see what has actually been spent.

Mr. Mather.—What exactly do you class as spare rolls? For example, you may be rolling to-day a particular section. You may have additional partly-worn rolls over and above the rolls you are using at the present moment. Those are spare rolls in one sense. In addition to that you have also new rolls capable of rolling sections which you may not roll for the next three months.

Mr. Peterson.—This list would only include rolls that are not actually put into use. Otherwise the Bank would not accept them as security.

President.—They are charged to revenue as soon as they are put into use?

Mr. Peterson.—Yes. They disappear from stock. They would come out of the statement which we keep for the Imperial Bank showing our stocks.

Mr. Mather.—The amount that you have given us is the full cost of unused rolls that are held as spare for these existing Mills?

Mr. Peterson.—Yes.

President.—I do not know if we can get at all figures for the consumption of rolls.

Mr. Mather.—We could only get approximate figures.

President.—You have got the cost of rolls in your cost accounts under blooming and rail mills.

Mr. Peterson.—We can give you actual figures for the past five years. It is quite easy.

President.—It would be equally useful if you could tell us how many months with normal casualties this Rs. 13 lakhs would last?

Mr. Peterson.—It is very difficult to say.

Mr. Mather.—You could give us your annual expenditure.

Mr. Peterson.—That is perhaps the best way of doing it.

President.—Let us go on to spare ingot moulds. Do you make these yourself?

Mr. Peterson.—Yes.

President.—I notice that you go up from Rs. 2 to 10 lakhs.

Mr. Peterson.—Yes.

President.—Rs. 10 lakhs as compared with Rs. 2 lakhs seems to be on the high side for an article which you make yourself.

Mr. Mather.—One would rather expect it to go up in less proportion.

President.—How many ingot moulds are there and how long will they last?

Mr. Peterson.—If you like I can have a special enquiry made into this Rs. 10 lakhs. It may be due to the plant. I don't know. In any case I don't think that it is very important. If you take the present figure of Rs. 2 lakhs and multiply it by the amount of increase in production, it will amount to Rs. 6 lakhs. I don't think that Mr. Tutwiler gave you the actual cost of the mould.

President.—I notice that there is a very large increase under operation spares and loose tools. One does not quite understand this increase.

Mr Peterson.—I don't understand it either.

President.—If you like we can ask Mr. Tutwiler.

Mr. Peterson.—These figures are given to me by the Chief Accountant. I shall verify it. I don't think that there should be more spares on the new than on the old proportionately. I don't see any particular reason why there should be.

President.—The only other possible explanation is that you are extremely short.

Mr. Peterson.—I will ask for an explanation, if you will allow me, on that specific point.

President.—One would imagine that the greater part of stores was bought under the previous item and that these operation spares and tools were a sort of miscellaneous things not included in the more important ones.

Mr. Peterson.—The main item is electrical stores. The whole of the new plant is electrically driven.

President.—Under that head, the estimate goes up from Rs. 35 lakhs to Rs. 70 lakhs.

Mr. Peterson.—I was wondering whether some of that might not have been included under Rs. 50 lakhs.

Mr. Mather.—It seems to me that your electrical stores should not go up entirely in proportion.

Mr. Peterson.—I don't think that it would.

Mr Mather.—Supposing in the old plant you have motors of 200 h. p. of a particular type. You have got one spare and two working. When you start the Greater Extensions, one spare is probably enough for four motors.

Mr. Peterson.—It would probably be enough if the motors are of the same type.

Mr. Mather.—I am considering all the time that they are of the same type. Therefore in a number of instances you can increase the output of your plant without at the same time increasing your spares.

Mr. Peterson.—I don't think that there would be many cases of that kind. There is no electrical drive in the old mills.

Mr. Mather.—But there is a good deal of electrical auxiliary machinery in the old mills.

President.—The new power-house is already in use and the spares required for that must be included under what you hold to-day.

Mr. Peterson.—Probably they are. I don't think that they carry large spares.

President.—I don't know if we can go into that more deeply. You might find out about operation spares and loose tools.

Mr. Peterson.—Yes.

President.—Then as regards bricks, which come to Rs. 26 lakhs. Speaking absolutely as an outsider I should say this was on the high side. Here again what is your total expenditure on bricks during the year?

Mr. Peterson.—I will let you have it.

Mr. Mather.—Have not you possibly got abnormally large stocks accumulated in anticipation of the Greater Extensions coming into operation?

Mr. Peterson.—That may be.

President.—That is the kind of point I want to bring out. In that case, give us your estimate as to the amount of bricks or how many months' consumption this represents when the Greater Extensions are in full swing.

Mr. Peterson.—We will have a second column stating that it represents so many months' consumption.

Mr. Mather.—On the basis of your Greater Extensions being in full operation.

Mr. Peterson.—It can only be an estimate.

President.—Still it will give us something to go by. As regards coal, I have already asked you about it. I notice that you regard your present stock of iron and manganese ore as high because it goes down in the later table.

Mr. Peterson.—It must be so because raw material has been accumulated for the new blast furnaces. The material is all here.

President.—Is this mostly iron ore?

Mr. Peterson.—Entirely iron ore and a certain amount of manganese ore.

President.—The works cost of iron ore is about Rs. 3 a ton, is it not?

Mr. Peterson.—Rs. 3-5-0 a ton, I think.

President.—It comes to about 350,000 tons. One would like to know how many months' consumption it is when the Greater Extensions are in full operation.

Mr. Peterson.—We can work it out. It is about a million tons a year.

President.—It would be between 3½ and 4 months. Does this include any stock at the ore mines?

Mr. Peterson.—I don't think that has been included.

President.—'Dolomite and limestone' is a very small item. So is 'sulphur and scrap.'

Mr. Peterson.—Scrap is practically the same as finished product. We have got to keep that till we find a use for it. The new plant when in operation will have about 42,000 tons of surplus scrap. It will go back into the blast furnaces.

Mr. Mather.—You don't hold that very long.

Mr. Peterson.—Still we hold it for some time. On any given day we will have a considerable quantity.

President.—Do you mean that you are producing faster than you can use it? If so, you will eventually have to get rid of it.

Mr. Peterson.—We will have to. We have to put it back into the blast furnace at present.

President.—Or in the open hearth?

Mr. Peterson.—That is the amount in excess of what we can use in the open hearth.

President.—That is your estimate when the Greater Extensions are complete.

Mr. Peterson.—Yes.

President.—Then, you will be producing more scrap than you require?

Mr. Peterson.—Yes, more steel scrap than the open hearth furnaces can take. Probably we will eventually build another furnace to take that up.

President.—In the case of your outstandings also, can you indicate what that represents?

Mr. Peterson.—That is practically equivalent to 60 days' credit. We have to allow for 60 to 90 days usually.

President.—Do you give credit of that kind?

Mr. Peterson.—We try not to. We are very often forced to.

President.—One or two witnesses in Calcutta said that you insisted on a very prompt payment.

सत्यमेव जयते

Mr. Peterson.—I wish we could always obtain it. It was the Krityanand Iron Works people, I think, who did not agree with our terms of business. They asked us to quote and we quoted and sent them a copy of the usual terms of business. They did not accept.

President.—By the usual terms of business, is it 60 days' or 90 days' credit?

Mr. Peterson.—Usually 30 days' credit is allowed. After having allowed the credit, the difficulty is to get the money.

President.—You are not in a position to get interest after the expiry of 30 days'.

Mr. Peterson.—In the case of the railways we have lately told them that if they did not pay within a certain date, we would charge interest.

Mr. Ginwala.—Railways pay 90 per cent. in advance, do they not?

Mr. Peterson.—The arrangement is that they pay 90 per cent. on delivery and hold over 10 per cent. There is a considerable delay both in paying 90 per cent. and 10 per cent. We have complained repeatedly to the Government of India. Even in the case of the 90 per cent., there have been in some cases delays of 40 or 50 days.

President.—As regards stocks, your estimate is 110 lakhs.

Mr. Peterson.—We are taking two months finished products there.

President.—I don't quite follow. Is that mainly pig iron or steel?

Mr. Peterson.—It is now chiefly pig iron. Owing largely to the earthquake, business has been disorganised in Japan and our Japanese buyers are not taking it. We have a very large stock of pig iron in the yard just at present. We have about 50,000 tons of pig iron just now.

Mr. Mather.—A year ago, you did not have so much.

Mr. Peterson.—No.

Mr. Ginwala.—As you have more sections to roll, you have to keep stocks in hand?

Mr. Peterson.—Yes, to meet a sudden demand for any particular section.

Mr. Mather.—I thought that you usually sold your structural steel to merchants.

Mr. Peterson.—We do usually, but sometimes a particular dealer is very anxious to buy a particular section and is prepared to pay a higher price.

Mr. Ginwala.—Do you charge anything for prompt deliveries?

Mr. Peterson.—We don't make any extra charge unless it is a particular arrangement at the time. It would be a matter of price.

President.—Mr. Ginwala is referring to the conditions in America. For prompt deliveries of certain shapes they were paying a sort of premium over stabilised rates.

Mr. Peterson.—I think that we might get that. The premium will be in the form of a special price. We don't have any system of charging a premium. In case of prompt delivery, we say 'you want it quickly and we will charge you more.' It comes to the same thing.

President.—On the question of ascertaining the working capital required from the balance sheet, I think that something is to be taken into account on the other side. You have not only got book debts due to you but also liabilities which amount to Rs. 134 lakhs. If some people owe you money, you also owe money to others and the ore can be set off against the other.

Mr. Peterson.—Most of these are not business liabilities but probably are acceptances on account of machinery ordered from America.

President.—A good deal of that must be payments on account of the Greater Extensions.

Mr. Peterson.—I should say probably about Rs. 30 lakhs for materials supplied and not paid for.

President.—But in arriving at the working capital, one has got to make some allowance for the fact that you obtain finance in this way.

Mr. Peterson.—We can.

President.—And if on part of your liabilities you have to pay interest, some of your debtors also have to pay interest to you.

Mr. Peterson.—It comes to the same thing.

President.—Then again throughout the greater part of the year you are financed to some extent out of profits. The profits of the last year were small and so little was available from that source.

Mr. Peterson.—If we used the money from profits, we would have to charge interest on the money as a part of the cost.

President.—Why?

Mr. Peterson.—When we use money for purposes of this kind, we would naturally charge interest.

President.—Nobody has got a claim to the profits until you close your accounts for the year and declare them.

Mr. Peterson.—They would be used to a certain extent there.

President.—Surely to the full extent. You would not keep a larger cash balance than was necessary to meet your requirements.

Mr. Peterson.—Do you mean we would save interest in that way?

President.—Yes, inasmuch as you would use your own money before borrowing.

Mr. Peterson.—We would save so much interest and the profit would increase so much.

President.—The amount you borrow is diminished by the amount you have made as profits.

Mr. Peterson.—We could not keep profits in our business and suddenly take them out when we pay dividends. We would have to borrow from time to time.

President.—Would you pay your profits within three months?

Mr. Peterson.—We should not. If we used our own monies, the profits would increase because we would not be paying interest on the working capital. But the interest on such money, whatever sources it comes from, would be a legitimate charge to costs.

President.—Supposing you are making regular profits, and they amount to so much money on an average, it will be possible to calculate how much you are likely to have in hand from that source.

Mr. Peterson.—We would have to take into consideration the fact that when the payment of dividends falls due it would be difficult to borrow the entire money that might be required.

President.—Quite. But if we are making any calculation on the basis of the profits which the Company ought to earn, we have got to take that into account in connection with the question of the working capital.

Mr. Peterson.—I think we would. In dealing with the question of working capital we have to take into account the stock which we have on a given date. I have not considered the question as to where that money is to come from.

President.—For the last five years you have not had much choice?

Mr. Peterson.—No.

President.—But if you are making any calculation on the basis of protection the position is changed?

Mr. Peterson.—You can reduce that by a quarter of the profits that the Company might be expected to earn. I doubt whether it would be safe to reduce it by more. Any profits would simply go as a reduction of the borrowings under the cash credit.

President.—You would be holding three quarters of the profit in cash?

Mr. Peterson.—We would be. Dividends would be paid every six months ordinarily if they were available.

President.—As far as I am concerned that pretty nearly covers the whole ground on that subject.

Mr. Kale.—We are told in the course of evidence that on a plant like yours half the amount of the working capital you are contemplating will be quite enough. That is why I am anxious to ask you.

Mr. Peterson.—Against that I can only put our actual experience. The estimate of working capital you refer to is too low.

Mr. Kale.—Is your figure supported by any other works?

Mr. Peterson.—In India I cannot give you a comparative figure because none exists.

Mr. Kale.—In other countries.

Mr. Peterson.—Their working capital is probably much lower because they don't have to carry these stores.

Mr. Kale.—Supposing allowance is made for these stores, will the two things be comparable?

Mr. Peterson.—I doubt it; you also have to consider the conditions of credit in various countries. In America probably no credit will be given. I do not know. In England possibly longer credit might be given.

Mr. Kale.—Have you compared your working capital with the working capital of some of the engineering firms who are practically in the same position?

Mr. Peterson.—I don't think that the kind of stores and stocks which we carry would have to be carried by them.

Mr. Kale.—Some of them will not have to carry them to the extent to which you have, but will it not be worth while comparing.

Mr. Peterson.—I do not know from what source you could get information as to their stocks and stores carried by them.

Mr. Kale.—The general impression left in one's mind is that this figure is rather high as working capital when the value of your output is Rs. 3 crores. Your working capital comes to nearly Rs. 2 crores.

Mr. Peterson.—The figure is raised due to the stocks of the raw materials which you must hold; I do not know how you can reduce the three months stock on hand. If you have not got raw materials in hand sometimes you have the risk of shutting down the works for a short time and that means tremendous loss to the Company.

Mr. Kale.—If generally the prices come down, do you think these figures will be reduced?

Mr. Peterson.—If the prices come down you may reduce the figures proportionately. I think possibly the figures for outstandings might go down. At present there is difficulty in getting this money owing to the financial position of India.

President.—In your estimate of what you require for the Greater Extensions Rs. 210 lakhs is due to spare parts and so on and stores including bricks.

Mr. Peterson.—Practically.

President.—That is a very high proportion?

Mr. Peterson.—I think it is the only thing you can do in this country. There is no other source from which these could be obtained. They have to be kept.

Mr. Mather.—Your bricks are locally manufactured?

Mr. Peterson.—They are obtained from the Kumardubhi Works.

President.—It is one of the items on which I want the number of months' consumption they represent.

Mr. Peterson.—I do not know whether we have succeeded in getting three months' stock. Generally speaking that represents three months' stock.

President.—After the experience of the railway strike I cannot say of course that the stock is excessive because at that time it was difficult to get anything.

Mr. Mather.—Can you say really for what length of time your electrical stores such as cables are estimated to last?

Mr. Peterson.—The best way to get at that would be to make a statement of actual consumption.

Mr. Mather.—I think that is the most convenient way. It is a fairly straightforward estimate in the case of rolls, ingots and raw materials. You might necessarily have to hold stocks of some kinds of electrical machinery for a couple of years and more. It will be useful if you can split this up into consumable stores and put it on a more reasonable basis.

Mr. Peterson.—I would draw the attention of the Board to the Chief Electrician's statement that he has to hold a large quantity of cable in stock.

Mr. Mather.—Information has been given to the Board by importers of iron and steel to the effect that during the last year when times were normal they could get iron and steel out in practically any form they wanted in two or three months from the date of the order. It may be possible that in regard to some of your stores you cannot get them as quickly as that, but I do not know if there is any evidence to show that it takes a very long time generally.

Mr. Peterson.—You have got to remember that some of these requirements, especially spares, have to come from America.

Mr. Mather.—The requirements for machinery spares are on a different footing in so far as ordinary things like oil, grease and cables and so on are concerned.

Mr. Peterson.—When the subsidiary companies are coming into operation we might probably get cables on the spot and to that extent we might reduce our working capital.

Mr. Mather.—In the case of things required to replace broken parts that is probably a very necessary insurance but I do not think some of these things are in fairly regular consumption.

Mr. Kale.—What is your system of purchasing these stores?

Mr. Peterson.—You mean in America or in India?

Mr. Kale.—Both. I have never seen any tenders called for by your Company in India for articles that are manufactured here.

Mr. Peterson.—What we usually do in India is to call for tenders in Calcutta. The Calcutta office calls for tenders and submits them to the Purchasing department here for selection.

Mr. Kale.—So the purchases are made by tenders?

Mr. Peterson.—Yes. We do not invite tenders publicly.

Mr. Kale.—Don't you think that there is much advantage in having a public tender?

Mr Peterson.—Practically only a certain number of people whom we knew could supply these.

Mr. Kale.—Owing to competition between these firms you can get things cheaper?

Mr. Peterson.—We ask half a dozen firms to quote for the particular things we require and we select the cheapest. Suppliers know that competitors are being asked to quote.

Mr. Kale.—But I think publicity will be an advantage.

Mr. Peterson.—It might conceivably be so.

President.—Your position will be much stronger when you appeal to Government to call for public tenders in India for all that they require if you can say that you do it yourself.

Mr. Peterson.—I do not think there is much bought in this country.

Mr. Kale.—There are many things that you can buy in this country. The Chamber of Commerce are pressing the Government to buy things in India.

Mr. Peterson.—It is no use calling tenders for silica bricks, for instance.

Mr. Kale.—Certainly not things which you manufacture but those which you do not manufacture.

Mr. Peterson.—We do not really buy very much of that kind of thing.

Mr. Kale.—Can you give me an idea of what you buy in India?

Mr. Peterson.—The figure will not be very high. Generally speaking we buy about ¾ of what we sell. We can give you a statement.

Mr. Kale.—I want only consumable stores.

Mr. Peterson.—You want what the actual expenditure is on consumable stores. I can get it from the Purchasing Department.

Mr. Kale.—I thought if you could improve this organisation of purchase that would be a source of some saving.

Mr. Peterson.—I think there is a pretty elaborate check on it already and everything that is done at Jamshedpur, every letter that is written, every order that goes out, all go to Bombay daily and are checked there. Every letter issued by the Works is compared there and the orders sent from our Bombay or Calcutta office.

President.—There are one or two other points. One of the arguments put forward in evidence was that assuming by means of protection the imports of iron and steel were to a large extent reduced, the inevitable result must be a corresponding reduction in India's exports. The way it would operate would be a rise in exchange and it was represented that it would have a very unfavourable effect on agriculture in India in view of the fact that a large proportion of India's exports at present are agricultural produce. That was the argument that was put to us.

Mr. Peterson.—That is a general argument against the establishment of any industry whatever in this country, not steel in particular. If it is regarded as a disadvantage that anything imported into this country should be replaced by a thing manufactured in this country, that would apply to every industry not necessarily to this alone.

President.—One reply suggested here was that, if industries developed without protection, it would probably be a gradual process and the disturbance effected would not be great and things would adjust themselves.

Mr. Peterson.—I think it would be a gradual process in any case. It is now 13 years since the steel industry started. The manufacture has been steadily growing and will continue to grow, but even with the Greater Extensions the production will only be 50 to 60 per cent. of the total materials coming into India. It seems to me that that consideration suggested would rule out any possible manufacture in this country at all.

President.—There was one point in that connection that I put to the witness, that as regards the manufacture of steel, growth would have to be by sudden jumps.

Mr. Peterson.—The manufacture of steel is really not economically profitable unless it is done on a large scale. Probably the plant as it will stand when completed is about the smallest size plant that has any chance of competing with the foreign manufacturer at present. It would be no use thinking of any smaller plant.

President.—You have to start with a costly plant?

Mr. Peterson.—I think it was recognised 12 years ago that the smallest economic unit for a steel plant that could work profitably at all in any country would cost about Rs 4 crores, and considering the rise in the cost of plant materials, etc., and the development of the industry elsewhere you could put that at Rs. 12 or 15 crores to-day.

President.—Surely the rise in the cost of steel machinery is not as great as that: it is hardly 200 per cent.

Mr. Peterson.—I do not know: it might easily be that because of the improvements in practice and other things.

Mr. Mather.—Machinery has become more elaborate?

Mr. Peterson.—It is the continuous mill that is going to hold the future of the steel industry.

President.—That would apply to part of the plant, not to the whole of it.

Mr. Peterson.—Then the blast furnace that will be successful in India in future will be the large blast furnace. I think there is only one blast furnace in England of the size we have got here.

President.—That brings in the other element of larger production. Referring to the figure that I mentioned to you yesterday of Rs. 15 crores as the estimate of the United Steel Corporation of Asia for their capital expenditure on their steel works proper, apart from the subsidiaries and the working capital, do you think that, so far as Tatas are in a position to judge, it is a reasonable estimate in view of the decrease in price since you started?

Mr. Peterson.—It is difficult to say. I should say that when they came to erect they would find that the estimate would go up by 1½ to 2 crores. That would go to Rs. 17½ crores. Do you know whether they take plate mills, sheet mills, etc., in estimating?

Mr. Mather.—We were not given that. They have changed their mind since the original estimate was made.

Mr. Peterson.—It is very difficult to say whether it would be fair or not unless you say what is in it.

President.—What they gave was an approximate cost of a steel plant producing something like 400,000 tons. If you take your Rs. 21 crores, divide it into what you spent up to 1916-17 and what was spent since then, double everything that was spent up to 1916-17 and take 66 per cent. of the subsequent expenditure, it comes to something like Rs. 17 crores. If you deduct depreciation it would bring you to Rs. 15 to Rs. 16 crores. That is a very rough way of getting at it and still it comes to a figure which is on the same level.

Mr. Peterson.—I do not know how the figure would work out in practice.

Mr. Ginwala.—You have got capital cost figures of other countries. You have referred to them in your reply to Mr. Homi's statement.

Mr. Peterson.—We have figures of our capital cost per ton before the war period but not up to date. They are published from time to time in the various Trade Journals and proceedings of the Steel Institute.

Mr. Ginwala.—After getting the figures for the United Kingdom you may add a percentage.

Mr. Peterson.—You won't find any plant in the United Kingdom that will be exactly similar to this plant. Conditions will be different. The plant may have a blast furnace and no steel making capacity, may have steel furnaces and one blooming mill, may have small mills and nothing else. It is very difficult to compare. With regard to these estimates, have they taken the cost of housing of labour and other things?

President.—All we have got so far is rather sketchy.

Mr. Peterson.—Have they included collieries in that?

President.—Yes. Everything except subsidiaries and working capital.

Mr. Mather.—They have estimated the town at £71,000 for the first instalment. That is independent of the water supply.

Mr. Peterson.—I am merely pointing out the difference.

President.—What we want to get at is whether Rs. 15 crores is a fairly approximate estimate of the cost of a fully equipped Works in India actually used for producing over 400,000 tons?

Mr. Peterson.—It would be too low if you take everything into consideration.

President.—Practically nearly the whole of your figure of 21 crores for your capital expenditure will have been incurred by the end of March next.

Mr. Peterson.—Yes.

President.—So that your fixed capital expenditure in March 1924 will practically be complete?

Mr. Peterson.—You mean the expenditure on the Greater Extensions: yes, it will be completed by about that date.

President.—From that date onwards you will no longer be worried by this tangle of the Greater Extensions?

Mr. Peterson.—No.

President.—There was a letter that came in during the last two or three days giving certain prices paid per ton of coal, and also the average price you received per ton for the rail mill products, and for the bar mill products for certain years. Would it be possible to give in the case of each year the average price for all products?

Mr. Peterson.—You want a statement year by year?

President.—I want the average price per ton of all finished steel products for the four years 1920, 1921, 1922 and 1923; also the average price per ton of all rail mill products and the average for all bar mill products.

Mr. Peterson.—I think we can work that out.

Mr. Mather.—I would like to have some information about the figures in a statement that you sent us some time ago. On the first sheet you say "Rails—Ordinary sale, Contract sale." You have received rather more for your ordinary sales than for your contract sales but in 1922-23 you received Rs. 116 for ordinary as against Rs. 135 for contract sale. What kind of rails are those? I do not know what 'ordinary sale' means for rails at Rs. 116. I thought practically all your rails were sold under contract?

Mr. Peterson.—It must have included second class rails.

Mr. Mather.—There would be some rails that are not second class?

Mr. Ginwala.—I don't understand what 'ordinary sale' means.

Mr. Peterson.—Anything that we have sold not under contract.

Mr. Mather.—May we take it that this includes second class rails?

Mr. Peterson.—Yes.

Mr. Mather.—And the light rails?

Mr. Peterson.—No, they are shown in the bar mill.

President.—In giving the average that I asked for I think it would be better to leave out the second class rails altogether because they have always been eliminated in the case of other figures.

Mr. Peterson.—Yes, we will take that out.

Mr. Mather.—We have the extraordinary position again, for instance, in 1920-21 in the bar mill that your ordinary sale price for light rails is Rs. 195 and your contract sale price is Rs. 327: that seems to be an exceptionally favourable contract.

Mr. Peterson.—Rs. 327 is really the price of rails prevailing in other countries at the time. The low price in 1920-21 is due to outstandings of previous years.

Mr. Mather.—As regards the structural steel, can you tell us just what contracts these are? Are these for steel supplied to Government?

Mr. Peterson.—These are mainly supplied to engineering firms.

Mr. Mather.—There is probably a standing arrangement?

Mr. Peterson.—They take so much per year at a certain definite discount under the landed price.

President.—There is one point that I ought to have mentioned. We have not, I think, got much information either as to what you expect your cost of production to be per ton in future or what price you expect to receive.

Mr. Peterson.—That is given in a statement that I sent to the Tariff Board.

President.—That is your average for the whole steel?

Mr. Peterson.—Yes; that is an attempt to get at the future cost.

President.—Take your Jamshedpur cost—Item No. 4. You estimate your works cost of steel at Rs. 115 a ton. That covers all qualities?

Mr. Peterson.—Yes. That is the average price for everything.

President.—One wants to have an idea how that is distributed over the various products. After all we cannot cheerfully say "Put a duty of 50 per cent. on all classes of steel" and leave it at that. It might be too high in one case and too low in another.

Mr. Peterson.—We can do that. You want that for certain definite articles?

President.—You can take the average cost for plates, sheets, structural material, rails, bars and so on. I take it that your structural materials are produced from one kind of mill and you may take the average of that mill, and if they are produced from another mill take the average of that mill.

Mr. Peterson.—It will have to be the average of both.

President.—I am thinking of the difference between the 28" mill and the Bar mill, for instance. It is not so much great detail that is required but we do want to know as between rails and heavy structurals, bars and light structurals, sheets and plates and so on.

Mr. Peterson.—I have got it worked out, but I have not got it with me just now.

President.—I would rather like to have it from the Company in that way for the main items.

Mr. Peterson.—We have worked that out ourselves and we will let you have it.

President.—Does this average of Rs. 115 include galvanized sheets?

Mr. Peterson.—Yes; that would include all products.

President.—You cannot give us in detail the average current price for each product because there are innumerable extras, but you can give us perhaps the basic price?

Mr. Peterson.—We would divide it this way: rails, sheets and bar mill products. Do you want it in greater detail?

President.—I take it you have got some estimate of what the costs are likely to be of the things that you are not yet producing and it would be useful to have it, I think.

Mr. Peterson.—We are at present preparing a statement showing what the costs will be.

President.—If you can let us have a statement giving these figures it would be helpful.

Mr. Peterson.—To get the average you have got to get at the tonnage. We will divide these into Bar Mills, plates sheet, bars, tin bars.

Mr. Mather.—Have you no estimate of the cost of sleepers?

Mr. Peterson.—We shall not be making very many.

President.—I think you said yesterday in one of the statements you handed in that you anticipate that, if the duty you suggested were imposed, steel rails would probably enter the country at Rs. 120 a ton including freight and landing charges?

Mr. Peterson.—Yes. That is the statement with regard to the evidence of the Agents of the G. I. P. and the B. B. & C. I. Railways.

President.—Do you anticipate that the foreign manufacturer will meet the imposition of protection by lowering his prices still further?

Mr. Peterson.—I think he would cut his prices as far as he can in order to keep his works going.

President.—If steel rails enter the country at Rs. 120 per ton that would mean an f. o. b. price of about £6-16.

Mr. Peterson.—That is above the rate before the war. If protection had been given in England it would have happened. The general election has gone otherwise. I was merely arguing from our experience of the wagon makers. They were certainly quoting last year much under cost in order to retain the business. I think the rail makers may do the same thing in regard to rails.

President.—I think your case was that they had already been doing that?

Mr. Peterson.—They are doing it and they may do it still further if protection is given.

Mr. Ginwala.—I should like to know whether for your plant as now laid out it is absolutely necessary to produce as much as 200,000 tons of rails in a year?

Mr. Peterson.—No; there is no necessity. But if we do produce 200,000 tons in a year we could produce rails considerably cheaper, that is to say, we can reduce the price of rails to the country.

Mr. Ginwala.—The point in my mind is this. If you could cut that part of your production as much as possible and free the railways from the additional burden, the difficulty of the situation would be very much lightened.

Mr. Peterson.—That is impossible. We must manufacture some rails.

Mr. Ginwala.—How much must you manufacture?

Mr. Peterson.—We reckoned on manufacturing at least 150,000 tons in the next year, but I don't think the requirements of the railways would be anywhere near that.

Mr. Ginwala.—Can you run your Works efficiently without manufacturing more than 100,000 tons?

Mr. Peterson.—Yes, we can probably do it at 100,000 tons.

Mr. Ginwala.—Supposing you stop manufacturing rails, would railways be able to get cheap rails?

Mr. Peterson.—Certainly they would not. Prices would be put up against them, that is practically certain. Further we cannot stop manufacturing rails because of these contracts.

Mr. Ginwala.—Apart from the question of contracts, could you stop manufacturing rails and still dispose of all your output?

Mr. Peterson.—We could not dispose of the whole output in the form of structural materials or anything like that.

Mr. Mather.—Why should you think that it would be almost certain that English manufacturers would put up prices? I suppose that you are aware that English manufacturers are sending rails to Australia this year at prices which were at the time lower than anything that have been quoted in India.

Mr. Peterson.—I think that, if there was no competition in this country, rail makers in England would fix it high, whereas if there was competition they would fix it lower.

Mr. Mather.—I cannot see any evidence that rails have been sold in this country at lower prices than in other countries. Is any dumping going on?

Mr. Peterson.—I don't think that there is any chance of dumping going on in the matter of rails, considering the price at which we are selling. The railways cannot possibly get rails for this price. The B. N. R. could not get rails at Rs. 110, for instance.

Mr. Mather.—That is a special case. That is the main point. Where do you think that rails are being under-sold in India by British manufacturers?

Mr. Peterson.—I don't think that there is much dumping going on in rails.

President.—They are selling at a price which is the best that they can get?

Mr. Peterson.—What I mean is that there is no dumping in order to get the orders away from us. The orders that we have got are not orders that they want, at any rate not at the same price.

Mr. Mather.—So there is no reason to believe that British manufacturers are selling rails cheaply in order to put you in difficulties?

Mr. Peterson.—Of course they were selling below the home price in April.

Mr. Mather.—April prices were exceptional and in any case that is almost an invariable practice in all countries.

Mr. Peterson.—Yes, we do it ourselves.

President.—Then, I take it that the amount of structurals you can sell is really limited by the capacity of the engineering firms in this country?

Mr. Peterson.—By the capacity of the Indian market.

President.—That is to a large extent the capacity of engineering firms?

Mr. Peterson.—Yes.

President.—Therefore until the capacity of engineering firms is enlarged you cannot expect to sell in the shape of structurals to the full demand of the country. You cannot supply because the necessary intermediate channel does not yet exist?

Mr. Peterson.—You would have to divide structurals into different classes, *viz.*, joists, pillars and things of that kind. I don't think that all these would depend on the engineering firms. In many cases they are used without any fabrication at all.

President.—What we were told quite distinctly by Mr. Cockran, of Messrs. Burn & Co., was, supposing the Government of India gave work to all the engineering firms up to their full capacity, that would not be near the consumption of this country of fabricated steel.

Mr. Peterson.—By fabricated steel he must have meant steel on which work had actually been done, not the ordinary steel used in this country. Ordinary beams can be used without much fabrication to replace wood. It does not require any elaborate engineering works to do that.

Mr. Mather.—It is not elaborate, but still it is classed as a fabrication work. As soon as you punch holes and rivet it, it becomes fabricated.

Mr. Peterson.—That could be done without a big engineering workshop. There is no difficulty in extending the capacity of the country for that sort of work. Your question was whether our capacity was not limited by the number of engineering firms or not. I don't think that engineering firms really come in. I think that in practice to have that kind of work done does not require any special engineering skill.

President.—After all, that is a special case. As far as buildings are concerned it is very simple. There are a great many things besides the kind of steel you can sell as beams in the structural steel. I am using the word 'structural' in a broad sense. Your sale in this country at present must at present be limited by the capacity of engineering firms in this country who deal with it.

Mr. Mather.—I think that the indications are at the present moment that it is limited more by the capacity of the country to take it. I have worked out the figures for 1922-23. As far as I can see, the imports of structural steel coming in as such, or as fabricated steel, but not including bars, and your output of structural steel, come to not more than 130,000 tons.

Mr. Peterson.—It is very small.

President.—That is relevant to the point raised by Mr. Ginwala. He says that you can give up the manufacture of rails.

Mr. Peterson.—I don't think that we can give up the manufacture of rails.

Mr. Ginwala.—According to Mr. Mather's figures, the total quantity of steel of the kind we are considering and imported into India is about 700,000 tons.

Mr. Mather.—Mr. Ginwala has gone on a broader basis; sheets, beams, etc., he has included.

Mr. Peterson.—I think that that would be very much in excess of our capacity.

Mr. Ginwala.—The point is, can you reduce your output of rails?

Mr. Peterson.—We could not do it.

Mr. Ginwala.—You have laid out your plant on the assumption that one fourth at least of your output must be rails.

Mr. Peterson.—Yes.

Mr. Mather.—Sheets, black sheets, and plates together come to about 96,000 or 97,000 tons. Can you make more than that?

Mr. Peterson.—We cannot make more than 36,000 tons of sheets.

President.—Will you be able to tell us how the output of sheets would be divided between galvanised and black?

Mr. Peterson.—We can divide it in any way. If you want our estimate of how we are likely to divide it, I don't think that we have gone into that yet. It depends on the market. Our machines are quite capable of adjustment and would turn out whichever is more profitable.

President.—Clearly you could sell more as black sheets.

Mr. Peterson.—I don't think so. We have a complete galvanising equipment, by which the whole of these sheets can be galvanised.

President.—Have you considered this question? Great Britain produces much the largest proportion of the galvanised sheets that are imported. As soon as you came into the market you might find that the price dropped heavily. They may be making big profits on galvanised sheets.

Mr. Peterson.—We know they are. But if the import is 130,000 tons, and our output is 36,000, it would not pay them to lower prices because we came in. In that case they would be losing on three-fourths.

President.—They might hope to drive you out.

Mr. Peterson.—I don't think that there is any chance of that for other reasons.

President.—We had evidence from Mr. Anandji Haridas, a big importer in Calcutta, as to the advantage possessed by the Tata Iron and Steel Co. in respect of railway freights upcountry. What he said was that in normal times the imported steel found it exceedingly difficult to compete in the United Provinces, right up to Delhi and also in the Central Provinces and down in the direction of Madras, because of the difference in railway freights. I am sorry I have not brought the figures with me. He said that your rate from Jamshedpur to Delhi was something like Rs. 18, whereas the freight the imported steel had to pay from Calcutta to Delhi was Rs. 36 a ton.

Mr. Peterson.—Probably he is referring to concession rates which are open to anybody else who offers the same tonnage as we do.

President.—I am not suggesting that there is any improper action.

Mr. Peterson.—He can obtain them too.

Mr. Ginwala.—How can the importer offer that tonnage?

President.—I take it that there are not many importers with sufficiently large tonnage.

Mr. Peterson.—There would be in Calcutta big importers who can offer the same tonnage as we do.

President.—Do you send your goods *via* Calcutta?

Peterson.—*Via* Gomoh.

President.—The importance of it is in the fact that as regards part of your market, owing to that fact, you are at present enjoying a sort of natural protection.

Mr. Peterson.—I don't quite know what their freights are from Calcutta to Delhi or Cawnpore.

President.—I can give you their statement.

Mr. Peterson.—As far as our freights are concerned, we have concession rates to Cawnpore and Delhi. They are station to station rates. You can find all these rates in the Railway rates book. I don't quite understand why the importer does not get that.

Mr. Mather.—Some merchants gave us evidence to the effect that as soon as railway rates were raised, their own rates went up, whereas your rates remained the same, or approximately the same.

Mr. Peterson.—It is not a matter of special agreement between us and railways.

Mr. Mather.—Does it apply to anybody else?

Mr. Peterson.—Oh, yes. If anybody can buy here and ship, they will get the same freight. What we really get is the full wagon load rate from station to station and the special rates are fixed by railways themselves usually on consideration of the traffic they get. What I don't understand is why the importers cannot make the same arrangement.

President.—Apparently they cannot. What is your rate from Tatanagar to Bombay?

Mr. Peterson.—Rs. 18.

President.—Rs. 15 was what you quoted.

Mr. Peterson.—It has been increased.

President.—What is it to Calcutta?

Mr. Peterson.—It is between Rs. 2-14-0 and Rs. 3.

Mr. Ginwala.—When your output is increased to 450,000 tons, where will you find the market for it? I have gone into the figures of imports of iron and steel for 1920-21 and 1921-22 at various ports. The total imports into Calcutta in 1921-22 were 216,000 tons, so that even if you capture the whole Calcutta market, you will have to find a market for another 150,000 tons elsewhere. Assuming that you get a certain amount of protection, could you complete in Bombay at all?

Mr. Peterson.—It might be possible.

Mr. Ginwala.—In what way?

Mr. Peterson.—By sending steel round to Bombay by sea instead by rail.

Mr. Ginwala.—Have you considered it?

Mr. Peterson.—We have considered it. If necessary, we would probably charter special steamers and not take ordinary freight.

Mr. Ginwala.—What difference would it make?

Mr. Peterson.—We are not quite sure what we would get steamers for. We can send it in large cargoes.

Mr. Ginwala.—Assuming that you have to compete at the ports chiefly?

Mr. Peterson.—There is a qualification. Not necessarily at ports, but wherever we can, for instance in places like Lucknow, Cawnpore, Nagpur, Patna, etc.

Mr. Ginwala.—How much of your outturn can you dispose of at these ports where, if you get protection, you may be more or less on even terms so far as transport is concerned, with the foreign competitor?

Mr. Peterson.—I should say—this is my general impression—that for the next two years we can dispose of the whole of our output to Government and in the Calcutta market.

Mr. Ginwala.—All the 400,000 tons?

Mr. Peterson.—It won't be so much.

Mr. Ginwala.—I am asking you about the 400,000 tons. Calcutta only imports 260,000 tons according to the figures for 1921-22.

Mr. Peterson.—You are leaving out of account our existing production of 130,000 tons. We have to find a market for the difference between 420,000 tons and 130,000, *i.e.*, about 290,000 tons and not the full amount. Of this the subsidiaries will take 45,000 tons leaving 245,000 tons for the market.

Mr. Ginwala.—This is all steel?

Mr. Peterson.—Yes. We reckon on getting 100,000 tons of rails. That would leave 145,000 tons which we have to put on the market.

Mr. Ginwala.—Not in adidtion to 60,000 tons of rails you turn out now.

Mr. Peterson.—On the whole we expect to turn out 150,000 tons of rails.

Mr. Ginwala.—Still you will have another 150,000 tons to sell.

Mr. Peterson.—We would have 145,000 tons to sell after subsidiaries' "requirements". We expect to sell it in the Ganges valley, from Delhi to Calcutta.

Mr. Ginwala.—I have nothing to say, but I have some doubts.

Mr. Peterson.—You have an import of 260,000 tons. As I say for two or three years, I don't think the problem will arise. At the end of three years, consumption might increase. At present it is very restricted.

Mr. Ginwala.—But then if more steel is manufactured, it is a more difficult problem than you seem to imagine.

President.—You will never get your price in Bombay.

Mr. Peterson.—We would probably invade the Bombay market from the other side. Bombay must serve a large portion of the country inside by rail. We can probably compete in Ahmedabad.

Mr. Ginwala.—Assuming that protection is given, will you take Tatanagar as your basis or what will you do?

Mr. Peterson.—Do you mean what the Company will do in calculating the price?

Mr. Ginwala.—What will the Board have to do?

Mr. Peterson.—I think that from the point of view of the Board, Calcutta should be taken as the basis, being the nearest market.

Mr. Ginwala.—That is to say, to the total cost at Tatanagar, you will add the transportation and other cost from Jamshedpur to Calcutta—is that what you mean?

Mr. Peterson.—I don't think that it will be necessary. What we lose this side by the cost of transportation to Calcutta, we gain on the other side, *i.e.*, the interior.

Mr. Ginwala.—In that case, Jamshedpur is the basis.

Mr. Peterson.—I think that it would be simpler for the Board to take the price at Calcutta.

President.—We are determining what would be a fair price for the Indian manufacturer.

Mr. Peterson.—f. o. r. (his works) will be the fairest way.

President.—And compare with the c. i. f. price?

Mr. Peterson.—At his works. You can find out what it cost steel to bring out and compare it with the price at the works.

Mr. Ginwala.—From Calcutta we have to bring the goods to Jamshedpur.

Mr. Peterson.—If you want to make an absolute comparison on an absolutely fair basis, it can be done.

Mr. Ginwala.—Supposing the amount of protection depends on the difference between the price at which the foreign manufacturer can sell his steel and the price at which you can afford to sell, and if you do not add the charge between Calcutta and Jamshedpur to the foreign price, does the amount of protection remain the same?

Mr. Peterson.—You can compare our price f. o. r. Jamshedpur with c. i. f. Calcutta. That is perfectly fair.

Mr. Ginwala.—I wanted to get your opinion. It seemed to me anyhow that you might have to compete in other parts, but you know your business better no doubt.

Mr. Peterson.—Yes, we would have to compete in other parts.

Mr. Ginwala.—In that case, won't you be at some disadvantage?

Mr. Peterson.—There are certain parts of India where we could not compete such as Karachi, unless we get very cheap freights.

Mr. Ginwala.—There is the question of the Burmese market.

Mr. Peterson.—We cannot get reasonable freight from Caluctta to Rangoon. That is the difficulty there.

President.—You may have to keep large stocks in those parts, but then if you keep stocks, your working capital goes up.

Mr. Peterson.—I don't think that that question would arise, because it would be financed by the branch firms.

Mr. Kale.—I want to refer to the question raised by the President about the disturbance of the trade balance, which has been pointed out to us by the Bengal Chamber of Commerce and Mr. Pilcher. Do you think that the disturbance will not be so serious that it need be taken into consideration? Their point of view is this. Your claim is that the steel industry must be protected on national grounds. Agriculture is the greatest national industry and if protection, given to steel industry, is likely to ruin the agricultural industry, Government and the public must think twice before they embark upon a policy of protection. Is it your view that the disturbance that will be caused by the restriction of imports of steel will not be so very serious that it will affect the position of cultivators?

Mr. Peterson.—I don't think that it would affect it at all.

Mr. Kale.—Will the disturbance be sudden or will it be prolonged?

Mr. Peterson.—I should say that it would be pretty gradual.

Mr. Kale.—The imports into the country average about Rs. 250 crores a year; and about Rs. 10 to 15 crores worth of steel will be affected if protection is granted?

Mr. Peterson.—There will be a great deal of steel in it which will not be protected.

Mr. Mather.—The figure that the Bengal Chamber of Commerce gave us was that 30 per cent of the country's total imports of all kinds would be affected. I have worked out this and I find that about 10 per cent. (*i.e.*, about Rs. 25 crores) would be affected if protective duty were put on the kinds of steel you propose to make.

Mr. Kale.—You don't suppose that exchange would be so very seriously disturbed as to cause a disadvantage to the agricultural industry? We have to balance the interest of steel against the interest of agriculture. The question before the Board and the public will be whether agriculture will be affected in the way in which it is represented.

Mr. Peterson.—I don't see any reason why it should be.

Mr. Kale.—In your examination last time, you told us that, as the Greater Extensions come into operation, some of the covenanted hands that are now engaged on the works will be drafted on to these works.

Mr. Peterson.—Yes.

Mr. Kale.—Are you doing it now?

Mr. Peterson.—It is going on at present and some of these men who are in charge of particular departments will have the new departments added to their work.

Mr. Kale.—Your case was that there were certainly more men than were absolutely necessary on the works.

Mr. Peterson.—I do not think so.

Mr. Kale.—I remember Mr. Tutwiler said so.

Mr. Peterson.—It is not my impression, certainly with regard to the covenanted labour. In the case of the uncovenanted labour we have more men. I might explain that if we are to train Indians we have to have a certain number of additional men who are undergoing a process of training. They can only be trained on the works. In order to get them trained, we have to employ a certain number of men that we would otherwise not employ.

Mr. Kale.—I wanted to know whether this process is going on and whether as soon as they are trained they will be drafted on to the Greater Extensions?

Mr. Peterson.—This is going on continually.

Mr. Kale.—That applies to uncovenanted hands?

Mr. Peterson.—Yes. It does not apply to covenanted hands. We have no men being trained among the covenanted hands. We are training men to replace them.

Mr. Kale.—I wanted to ask you a question about the bonus system. I would like to know how it works. By bonus I understand a payment which is made in excess of the ordinary fixed salary or it may be only a part of the regular salary which is only paid at the end of the year. Then again, bonus may be made to depend on the outturn per man. I want to know how your system is worked?

Mr. Peterson.—Our bonus depends on the outturn, but part of the officer's salary is fixed and the bonus is so fixed as to approximate to the same amount in the case of the Open Hearth. In other departments it is considerably less. If a man does better work he will get a higher remuneration but he always gets a certain amount as fixed pay.

Mr. Kale.—The bonus is thus not bonus in the real sense of the word. It is a salary for good work done?

Mr. Peterson.—Part of his salary is fixed and part of it is based on the production. That is what it comes to.

Mr. Kale.—Was that the idea of bonus in the mind of the Company when it started?

Mr. Peterson.—There has been considerable alteration in the rate according to what was considered necessary.

Mr. Kale.—As I understand it, bonus is necessary for encouraging efficient production?

Mr. Peterson.—That was why it was originally put on.

Mr. Kale.—But now the idea has been abandoned?

Mr. Peterson.—It is on actual production that they are paid.

Mr. Kale.—I should have expected that the bonus should be dependent upon actual outturn.

Mr. Peterson.—It does. Half of the man's salary depends on the outturn and half is fixed.

Mr. Kale.—Let us take a concrete case. Supposing you wanted to pay a man Rs. 1,000 a month in order to bring him out, you pay him Rs. 800 as salary and Rs. 200 as bonus; so that, I think, the real object of bonus is not attained?

Mr. Peterson.—If his output works well we pay him Rs. 250 or Rs. 300; when it is less we pay him Rs. 150.

Mr. Kale.—It does not depend on individual effort? It depends on the work of the entire department in which case the object of bonus is not attained?

Mr. Peterson.—It is impossible to assess individual efforts.

Mr. Kale.—If you take each furnace?

Mr. Peterson.—In the case of covenanted hands you would probably have objection from the Trade Unions. It will probably be that one man will get more than the other.

Mr. Mather.—Each man will get paid according to the tonnage of the furnace on which he is working. This is the system in England.

Mr. Peterson.—It might be a sensible system. It may be done furnace against furnace. I do not know what particular objections there are.

Mr. Kale.—So far as I see, the system does not work in the way in which it ought to work, and the standard of production has not been increased in the proportion to the additions made to the furnace.

Mr. Peterson.—I think it has more than increased. I think these figures that I put in yesterday as compared with England will show that it has increased, whereas in England it has decreased.

Mr. Kale.—In the proportion you fixed originally?

Mr. Peterson.—That may be due to many circumstances. It may be due to the failing of in the quality of the materials and so on.

Mr. Kale.—Last time I asked a question of Mr. Tutwiler as to the qualifications of the men in the Open Hearth. Am I to understand that most of these men have got higher technical qualifications than men who have obtained experience and training in the Works?

Mr. Peterson.—You mean the College transit men?

Mr. Kale.—Yes. I got the impression last time that most of these men in the Open Hearth are college men.

Mr. Peterson.—Assistants and Superintendents and men of that class would be, but actual melters and others would not be.

Mr. Kale.—The idea at that time was that Indians might be taken up for these positions from a class which is different from the class from which you generally get students.

Mr. Peterson.—Our recruitment is not only from the Technical Institute. There are apprentices on the Works. There are foremen, etc., on the Works who are promoted from the workmen. In the Open Hearth department there are men quite apart from the Technical Institute men. One of the rollers we have in the bar mill is an Indian with no particular education who joined the Works, say, seven or eight years ago as an ordinary labourer and is now in charge of a shift and is regarded as their best roller.

Mr. Kale.—Unless you follow a policy like this, it is not possible to reduce your expenditure.

Mr. Peterson.—We are following this policy. Constantly people are being trained.

Mr. Kale.—Even in the Open Hearth you are following the policy?

Mr. Peterson.—Yes.

Mr. Kale.—I should like to know what is the money value of the sacrifices which the Company had to make during the time of war on behalf of Government?

Mr. Peterson.—That has been stated in our representation. You want to have it in evidence. We estimated it at Rs. 6 crores. That is the difference in the price of steel as supplied by us and the price at which Government could have bought it.

Mr. Kale.—That is not my question. The impression is that you have to carry a certain burden on account of the machinery you purchased during the war to help the prosecution of the war. The plant was purchased at high prices. I should like to have a figure giving the money value of this kind of sacrifice, so to say, that the Company had to make.

Mr. Peterson.—It would be very difficult to estimate the money value. To take a case we should certainly not have put up the stationary furnace in that particular form but for the war. We should have preferred tilting furnaces. We built these because they were the only furnaces that could be built in India at the time with the materials available and we built them to produce steel. I do not think you could put a money value on it at all.

Mr. Kale.—You cannot say to what extent you have suffered?

Mr. Peterson.—The plate mill is another case.

President.—You would not have put in a plate mill?

Mr. Peterson.—Possibly not. In any case we would have waited for prices to come down. The drag ovens is another case. We have written them off all altogether. We can give you the actual figures for that.

Mr. Ginwala.—You started your project first in 1916-17?

Mr. Peterson.—The Government were not in favour of the proposal when it was first put forward but later on they changed their mind and pressed the Company to proceed with the scheme.

Mr. Ginwala.—You had to discuss the details of the scheme and you altered the scheme as a result?

Mr. Peterson.—The scheme was considerably altered between 1915 and 1917.

Mr. Ginwala.—Was it after you had come to some sort of definite arrangement that you took the work in hand?

Mr. Peterson.—That would not be correct. The scheme was continually changed and altered as the conditions altered in the country and as the war went on.

Mr. Ginwala.—Was Government responsible for inducing you to make alterations in the scheme which delayed the progress of the scheme?

Mr. Peterson.—You are asking me a question over a period during which I was not here. We have put in all the correspondence. I cannot add to it from my personal recollection.

Mr. Ginwala.—You did not really make any progress for two years?

Mr. Peterson.—We could not get capital; we could not get the materials at all.

Mr. Ginwala.—It would have made considerable difference to the cost of the scheme if you could have started in 1917?

Mr. Peterson.—It would have made considerable difference, but nobody could have started then without the express orders of Government because of the difficulty of importing the necessary machinery during the war. It was a question of priority.

Mr. Kale.—I want to know the system of making appointments in your various departments. Do you call for applications in recruiting your men to the engineering and other branches—uncovenanted labour—and for the superior posts?

Mr. Peterson.—We do not call for applications.

Mr. Kale.—How do you then make your appointments? How do you know that there are men fit for particular jobs in the country?

Mr. Peterson.—They come to us in person. Men who have any particular ability of that kind, with the expert knowledge required, will apply to us either in Bombay or to the Works here.

Mr. Kale.—Would it not be better to call for applications so that you can get the best men available in the country?

Mr. Peterson.—Our call for applications to the Technical Institute was not very encouraging. There were 13 vacancies and we got 2,500 applications. It is very difficult to invite applications in this country because people without the necessary qualifications apply. Examining such applications means a certain amount of clerical work and waste of money and time. What actually happens is this. Any person who has been to Europe or America and has obtained training will be useful in the Works here and will be wanted and would come either with a letter to the Agents or to the Works from his Professors, stating that he has got certain qualifications. Either we get him an appointment at once or keep his name on record and give him an appointment when a vacancy occurs by looking up the records.

Mr. Kale.—For transport work you do not want any unusual qualifications, and men who have experience of railway transport in India will do? If you call for applications you will get the best men?

Mr. Peterson.—Are you thinking of the new staff required for the Greater Extensions?

Mr. Kale.—I am thinking of the best system to be followed by any employer.

Mr. Peterson.—Take the Duplex furnace, for instance. It would be useless to advertise for men in India with experience of Duplex plant. There could be none in India. There cannot be anybody in this country who has any experience of that.

Mr. Kale.—There are other departments in the Works.

Mr. Peterson.—There is an Employment Bureau here and the name of any candidate who applies for an appointment is kept on record here. They keep a list of such men and try and find places for them. During the last two or three months we have found places for two or three Indians with expert qualifications who have had training in England and America and have asked for employment. That is the way in which we make appointments.

Mr. Kale.—Is the same system followed elsewhere?

Mr. Peterson.—Yes. Generally speaking, I do not think it would be useful for steel works to call for applications by advertising.

Oral evidence of Mr. J. C. K. PETERSON and Mr. C. A. ALEXANDER, representing the Tata Iron and Steel Company, Limited, recorded at Jamshedpur, on the 15th December 1923.

President.—Mr. Alexander, you are at present the General Superintendent of the Works here,—is that the correct designation of your post?

Mr. Alexander.—Yes.

President.—Can you tell us what your qualifications are and your experience in steel making?

Mr. Alexander.—I graduated in Engineering in 1905 and I was in a mechanical engineering work until 1909. Then I went out on mill construction work and built some Open Hearth furnaces. After they were finished, I was made foreman of them and later on I was Superintendent for 6 years from 1909 until 1915, and then I was transferred by the concern for whom I was working to another plant where they were starting up a plant which had not operated for several years, where I was an Assistant Superintendent in general charge. From there I went to another steel plant in charge of three Open Hearth furnace plants as Superintendent. From there in 1917 I took the charge of a small steel plant with Open Hearth furnaces, blooming mill and strip mill. From there I came out here as General Superintendent.

President.—You have had considerable experience of steel making then?

Mr. Alexander.—I have been in direct charge as Superintendent of Open Hearths for about 8 years from 1909 to 1919 and the balance as General Superintendent.

President.—As General Superintendent the Open Hearth furnaces are under your general control and you have a good deal to do with them?

Mr. Alexander.—Yes.

President.—They are constantly under your observation?

Mr. Alexander.—Yes.

President.—The Company have sent us a copy of a note written by you comparing the spread between pig iron and ingots, (*a*) at Jamshedpur and (*b*) in certain work in Canada and the United States of America. I understand you are not in a position to tell us the names of the firms in Canada and in the United States for which you have given the figures?

Mr. Alexander.—I would prefer not to because I have got these figures from personal acquaintances in the steel business whom I had known for several years, and I consider it a breach of etiquette to give it out to the public.

President.—Can you tell us in the case both of Canada and the United States whether it is one firm or whether it is the average of more than one firm?

Mr Alexander.—One firm in Canada and the average of several in the United States.

President.—Can you tell us how many in the United States?

Mr. Alexander.—Five or six.

President.—Can you give us some idea of the approximate size of the plants for which you are giving the figures—I mean their approximate production of steel per annum?

Mr. Alexander.—The steel production of the one in Canada will, I think, be nearly like ours.

President.—The same as you have at present or as you will have when the Extensions are complete?

Mr. Alexander.—As we are now. They have two blast furnaces and the iron from both is converted into steel. Their furnaces are larger than our old ones and I think—I do not have the accurate figures of the finished products—I guess it would be like ours at the present time or, say, during the past 12 months.

Mr. Ginwala.—When you say furnaces, are they blast furnaces or Open Hearth furnaces?

Mr. Alexander.—I mean the total finished steel output would be about similar to ours.

President.—In the case of the 5 or 6 plants in the United States would you be able to give us the average figures? Would some of them be larger than yours?

Mr. Alexander.—Many times larger.

President.—All of them?

Mr. Alexander.—Yes.

President.—Can you give us the approximate figure for the total production of the 5 or 6 plants?

Mr. Alexander.—None of them has a production of anything smaller than 1 million tons a year of finished steel output and up to a maximum of between 2 and 2½ million tons a year.

President.—You obtained these figures when you were yourself in America during the earlier part of the year?

Mr. Alexander.—Yes.

President.—Were these figures supplied to you by the people on the management?

Mr. Alexander.—Yes.

President.—Not for publication but for such assistance as they could give you in regard to the running of the plant here?

Mr. Alexander.—Yes.

President.—Turning now to the note at the beginning of your note, you say "Tonnage in U. S. A. from furnaces of equal hearth areas will be about 20 to 25 per cent. greater than those at Jamshedpur." Are you in a position to give us any figures for the actual output for a comparable furnace?

Mr. Alexander.—Yes. Furnace plants comparable with ours will produce say from 18,500 a month to 21,000 tons.

President.—That is for a single furnace?

Mr. Alexander.—For the same number of furnaces of the same size as ours.

President.—Have you got a copy of these with you?

Mr. Alexander.—Yes.

President.—Are these the actual figures that you ascertained?

Mr. Alexander.—I was Superintendent of an Open Hearth plant of 8 furnaces which were very nearly the size of these. I was Superintendent of these furnaces for six years and these were 8 as compared with our 7 here, and I also know of other furnaces of about the same size in my experience. I was Superintendent of the Open Hearth Department and I had the opportunity of visiting other plants and comparing things. That is how I got these.

President.—Are you giving these figures as the result of your experience while you were actually working in America?

Mr. Alexander.—Yes.

President.—That is the tonnage of ingots?

Mr. Alexander.—Yes.

President.—How would that compare with what the furnaces here turn out?

Mr. Alexander.—As I said, 20 to 25 per cent. greater than we are turning out here.

President.—That figure you have given us of 18,000 to 21,000 tons corresponds to the 20 or 25 per cent. higher turn out that you have told us about?

Mr. Alexander.—I should think that it does.

President.—Did you make any special enquiries on this point when you were in America during last year?

Mr. Alexander.—Yes.

President.—Did you find that there had been any noticeable change since the time you were actually working in America?

Mr. Alexander.—Increased production since I left America.

President.—Can you give us a rough percentage?

Mr. Alexander.—10 per cent. I should say on an average, during the past four or five years.

President.—May we take it that the increase was due to the improvement in the type of furnace used?

Mr. Alexander.—Yes.

President.—You have given us an estimate that in the U. S. A. a furnace of equal hearth area will give 20 to 25 per cent. greater outturn. Were you thinking of things as they were in America when you were working there, or as you found them when you were there this year?

Mr. Alexander.—As I found them to be when I was there this year.

President.—You have told us on the same page that "in England no furnace fronts are water-cooled because it is neither necessary or economical". Are the furnace fronts in Jamshedpur water, cooled either in the old plant or the Greater Extensions?

Mr. Alexander.—Yes.

President.—You have submitted a chart showing the variations in production at Jamshedpur according to the season of the year. Do you get similar fluctuations in America between winter and summer?

Mr. Alexander.—Not for so long a period. What I have taken here as the hot season is six months and there it would be only two or three months and the tonnage is somewhat lower than during the other months. March and October are always big tonnage months, because the weather is about ideal at those periods.

President.—Then again I take it in the United States of America in the winter the extreme coldness also prejudices the output?

Mr. Alexander.—Occasionally; when it gets very cold, below zero, for a day or two things might freeze up, but that does not affect the average materially.

President.—On page 2 you refer to the fact that you have to be more careful at present as regards the grade of steel than they have to be in America, and you say "this necessitates more care and time which naturally reduces the output and the tonnage life of furnace". Have you got any figures which would enable you to compare the tonnage life of a furnace at Jamshedpur with that of one in America, that is, how many heats do you get out of a furnace before it is closed down for repairs in America as compared with what you get on the average here?

Mr. Alexander.—The average in America today on a similar output furnace will be about 200 heats and ours is about 100, that is to say, 175 to 200 in the United States as against about 100 here. I am only giving you approximate figures.

President.—Then, the bricks on the whole that you use in the furnace are not so good as those in America?

Mr. Alexander.—I am not prepared to answer that question because we are operating under entirely different conditions, and if we had Indian made bricks in America under American conditions, whether that would mean 100 heats out of a furnace I am not prepared to answer.

President.—In the Open Hearth furnace you use both silica bricks and fire bricks?

Mr. Alexander.—We use fire bricks in the checker work, that is, underneath the furnace. Everything in the upper portion of the furnace is silica.

President.—Which class of bricks gives out soonest?

Mr. Alexander.—Silica bricks.

President.—You have used imported silica bricks in Jamshedpur?

Mr. Alexander.—Yes.

President.—Is it not possible to compare on that basis the results you got from the imported silica bricks, and those you get from the locally made bricks?

Mr. Alexander.—I cannot answer that question from personal experience because we have had no imported bricks since I came here.

President.—On page 3 you say "If the tonnage at Jamshedpur were 20 to 25 per cent. higher, our conversion cost and consequently the spread between Pig Iron and Ingots would be reduced by about Rs. 8 to Rs. 10". I take it that what that means is that all costs would remain approximately as they are, but you would get a larger production and consequently the cost per ton would go down?

Mr. Alexander.—Yes.

President.—I tried to work it out arithmetically on the basis of that figure and it does not seem to me to amount to quite so much as Rs. 8; Rs. 6 or 7 was the figure I got. You give the conversion cost in one of your statements attached to your note as Rs. 36/9. Assuming that your outturn is going up in the proportion of 5 to 4—where you are getting 4 tons, you will get 5 tons later on?

Mr. Alexander.—That is right.

President.—If you multiply that figure of Rs. 36/9 by 4 and divide by 5 that ought to give you approximately the difference in cost per ton?

Mr. Alexander.—There is one thing you do not take into consideration here. Your conversion takes in the shrinkage of your charge: that would affect it. For every 100 tons of metallic charge you put in, you get out, say, 88 tons of finished product. Whether you get out 50,000 tons or more, the percentage of the loss remains the same.

President.—The total loss will be greater?

Mr. Alexander.—But not per ton.

Mr. Mather.—I examined this point on the basis of the statement that the Tata Co. gave us earlier showing the details of the conversion cost by eliminating the cost of feeding material which would remain the same per ton, and the ingot moulds which also would remain the same, and taking only the other items, including overhead, I got 25 per cent. increased output to meet the reduction of Rs. 9/3 including overhead.

President.—In that case it does not quite conform to these figures.

Mr. Mather.—I take that because Mr. Alexander says later on that "We would have lower fuel and labour costs per ton of ingots, fewer repairs to the furnaces, fixed and other charges per ton".

President.—If the overhead is included, I think you will certainly get a reduction of Rs. 8 or Rs. 9 a ton. But I imagined Mr. Alexander was including only the works costs.

Mr. Mather.—For the overhead it comes to Rs. 6/6.

President.—That is the figure I arrived at roughly. But of course quite obviously the more steel you can produce in the furnace, that makes an enormous difference in your overhead charges; they will go down per ton in an arithmetical ratio. You say "The cost of bricks represents 80 per cent. of the cost of re-building the furnaces and as we have to pay a higher price than in U. S. A., our cost for this item will naturally be higher". Can you give us the difference between the price of bricks here and in America?

Mr. Peterson.—We can give you the actual quotations.

President.—On page 4 you say "We are building a new Calcining plant in which our refractories will be calcined". Is it fire bricks that you make at Jamshedpur yourselves?

Mr. Alexander.—No.

President.—What exactly are the refractories?

Mr. Alexander.—Dolomite, magnesite; then we will calcine our limestone.

President.—It is for the limestone as well?

Mr. Alexander.—Yes. At present we are calcining them in kilns with our high ash coke as fuel and in these new types of plant the fuel is gas or tar from which we get no acids. The acids go into the refractories and the fluxes.

President.—And you hope to get better results?

Mr. Alexander.—Yes.

President.—The refractories will last longer in fact?

Mr. Alexander.—Yes.

Mr. Mather.—I have been examining this chart showing the difference in output between the cold and the hot weather and I find that although the difference looks fairly big, it does not come really to a great deal. Do you think that the cold weather period that you have taken here is, on the whole, a suitable climate for steel making; would you regard the conditions as reasonably good in the cold weather?

Mr. Alexander.—No. Not cold weather as the 6 months which we have taken.

Mr. Mather.—My own idea when I read your note was that you would have chosen just 3 months,—November, December and January.

Mr. Alexander.—I did not want to make it too outstanding.

Mr. Mather.—I think you would probably agree with me that in November, December and January there is no great hardship on account of the climate?

Mr. Alexander.—No, except that the men are not in a physical condition after going through the hot season and the rains.

Mr. Mather.—Roughly, as far as that is concerned, you would get nearly the same output in these 3 best months as you would get on the average in any other country?

Mr. Alexander.—We would get nearly the same output.

President.—The actual output might depend on other factors as well?

Mr. Alexander.—Quite, except, as I said, the men do not get over the effect of the physical condition during the summer and the rains in so short a time.

Mr. Mather.—I have calculated these figures and I find that if you maintain your cold weather output throughout the year, you would only increase the output for the year by about 3 per cent.

Mr. Alexander.—The difference between the high and low is something like 7 to 8 per cent.

Mr. Mather.—I was rather hoping to find some figures which would enable us to get some idea. The effect of the climate is probably greater than these figures show.

Mr. Alexander.—We can have this altered to 9 months and 3 months.

Mr. Mather.—If you can divide it into 8 and 4 months, it will be simple.

Mr. Alexander.—We can prepare a fresh chart, and send it to you.

Mr. Mather.—It is important for the Board to know that. As Mr. Alexander very rightly points out, climatic condition is a thing which cannot be altered. The Steel Co. cannot do anything which will affect that. If the climate does act in such a way that you lose an everage of say 5 per cent. or 10 per cent. in output for the year, that is a natural handicap to the steel industry in India which has always to be provided for, and it is a fact which the Board should take into account. Obviously it will not be possible to arrive at it very accurately, but it will be useful if you can get figures as nearly as they can reasonably be got.

Mr. Peterson.—We will have it prepared for November, December, January and February.

Mr. Mather.—On page 3, just below the middle of the page, you tell us that certain disadvantages are small as compared with the disadvantages resulting from the location of the industry and quality of steel made. Do you mean by that simply it is in a hot country?

Mr. Alexander.—Yes.

Mr. Mather.—You don't mean its position inside India?

Mr. Alexander.—No. It is purely climatic.

Mr. Mather.—You say that on account of the covenanted hands your labour costs in the Open Hearth Department are higher than in U. S. A. That may actually be correct, but it does not exactly show why that should be so. You don't employ any covenanted hands, I think, on the gas producers, for instance, except of course your Assistant Superintendent.

Mr. Alexander.—No.

Mr. Mather.—You don't employ any on the pit side of the furnace?

Mr. Alexander.—No.

Mr. Mather.—In the actual working of the furnace, do you employ about the same number of covenanted hands as would be employed on an American furnace?

Mr. Alexander.—On the floor side of the furnace, yes.

Mr. Mather.—I think that you have two covenanted hands per shift on each furnace on the floor.

Mr. Alexander.—Yes.

Mr. Mather.—How many would you have in America?

Mr. Alexander.—Two.

Mr. Mather.—In America, there would be a small number of additional men about the floor?

Mr. Alexander.—Yes.

Mr. Mather.—Here in Jamshedpur these additional men, who would of course be Americans in America or Europeans in Europe, are replaced by Indians?

Mr. Alexander.—Yes.

Mr. Mather.—So that the total number of Europeans working on the furnace is very distinctly less than you would have in the United States?

Mr. Alexander.—Yes.

Mr. Mather.—It does not seem inevitable at any rate that labour costs here should be higher. You have a certain number of men common to both Jamshedpur and America and then in America you have a considerable number of additional Americans or Europeans whose place in Jamshedpur is taken by Indians. As I say, it does not seem to me to be inevitable that the cost of these Indians should be greater than the cost of the smaller number of Americans in America, even if you had to add to it the extra cost of Europeans employed in India instead of in Europe or America.

Mr. Alexander.—You must pay them at least 50 per cent. more than they are paid in America, and then the wages bill for the balance is more here than it would be in America.

Mr. Mather.—I can accept that it is actually more. What we are trying to get at is whether it is necessarily more or why it should be more. There is one more or less unavoidable item, that is, you have to pay Europeans roughly 50 per cent. more. Is it also unavoidable that Indians and locally engaged hands who are replacing Europeans in Jamshedpur should cost more than the fewer number of Americans in America?

Mr. Alexander.—That is simply because you cannot get as much work out of individuals here.

Mr. Mather.—On page 4 you have given reasons why your tonnage should increase and costs decrease. You tell us "From the steel production of the new plant we will receive more scrap for the Open Hearth Furnaces" and so on. Are you using the maximum amount of steel scrap that is available at present in your Open Hearth furnaces?

Mr. Alexander.—Almost.

Mr. Mather.—A certain amount of steel scrap goes into the blast furnaces?

Mr. Alexander.—Yes.

Mr. Mather.—Do you put any other steel scrap into the blast furnaces?

Mr. Alexander.—No.

Mr. Mather.—Does all the other steel scrap go into the Open Hearth?

Mr. Alexander.—Yes.

Mr. Mather.—So that, to all intents and purposes, you are working at the maximum you have available, which is about 25 per cent. of the metal charged?

Mr. Alexander.—This is increasing as the tonnage of duplexing increases.

Mr. Mather.—Of course during the last year it may have been increasing. What is it now?

Mr. Alexander.—It has gone from 25 per cent. to 35 per cent. on an average, but we hope to get it up to 40 to 45.

Mr. Mather.—Is that the maximum amount of scrap you expect to have available for this plant?

Mr. Alexander.—We expect to have more. It is a question of how much we can charge with our arrangement of charging machines.

Mr. Mather.—Do you think that it is possible that your charging machines may not have the capacity to handle more?

Mr. Alexander.—We can charge additional scrap until the delay in charging more than off-sets the advantage we would have by increased scrap.

Mr. Mather.—You don't think that it might be met by increasing the number of charging machines?

Mr. Alexander.—On account of the lay-out of the plant and the type of charging machines this would be of no advantage.

Mr. Mather.—To that extent, of course, you more or less remain under some disadvantage—at any rate so long as your Open Hearth plant is as it is, wihout reconstruction?

Mr. Alexander.—That is right.

Mr. Mather.—That is more or less a handicap that is involved in the original design?

Mr. Alexander.—Yes.

Mr. Mather.—I will go further into the question of metal and scrap on the basis of one of your statements that covers this particular point. I have been looking at these figures you have given us for American costs in 1923 fairly closely, and there are one or two which I don't quite understand. I am taking the first table, that is, 1923 figures. You show the works cost of American pig iron as $24 or Rs. 72 a ton. When we get down to rails, you give the works cost of rails in the United States as $41. If this is the works cost without overhead, how do the American Steel Companies manage to sell rails at $43? Is $2 enough to cover their overhead and profits?

Mr. Alexander.—At the time I was there, they were making no profits on rails.

Mr. Mather.—Do you know anything in the circumstances of the time which would have led you to expect that they were not making any profits, whereas they usually do?

Mr. Alexander.—Several rail mills were closed down. Some of the uneconomical rail mills of the Steel Corporation were closed down. They were rolling rails only on those on which they could make even a small profit.

Mr. Mather.—Were these figures taken from economical ones or uneconomical ones?

Mr. Alexander.—From economical ones.

Mr. Mather.—They were economical ones and they were just about getting the market quotations, *i.e.*, $43? Assuming for the moment that there is no profit, do you think that $2 would be enough to cover the overhead cost?

Mr. Alexander.—I think so.

Mr. Mather.—It is probably the smallest ratio of overhead cost to other costs that we have seen. Do you anticipate that the Tata Iron and Steel Co. will get its overhead cost down to the equivalent of $2?

Mr. Ginwala.—Then it will be able to dump steel in every part of the world!

Mr. Alexander.—They have got so many more tons to spread their overhead cost over.

Mr. Mather.—It means more plant to make it.

Mr. Alexander.—Yes.

Mr. Mather.—It seems very strange that they should be able to sell rails at $43 when the works cost is $41. I wanted to make quite sure that the works cost given here was worked out and calculated in almost exactly the same way as your works cost which we could compare.

Mr. Alexander.—I don't think that we can make a fair comparison because at the same time they were selling rails for $43 which were costing them, say, $40 to 41, they were selling billets which cost them less to make at a much higher price than they were getting for their rails.

Mr. Mather.—That is just a temporary condition.

Mr. Alexander.—Yes. This is a temporary condition of the market in the first quarter of 1923.

President.—In view of the fact that last April or March the production in the United States reached record figures, it seems extraordinary that rails should be so uncommonly cheap. I always understood that manufacturers took advantage of a boom period to put up their prices.

Mr. Alexander.—It is the set price for rails. Before the war the price was $28.

President.—As far as one knows, $28 a ton was the price before the war. But then according to the costs you have given us, they had $5-50 in hand at that time instead of only $2.

Mr. Alexander.—That is true.

President.—One wonders why they stabilised the price of rails at $43.

Mr. Alexander.—At the time they were selling rails at $28, they were selling billets at $22 and sometimes less than that. Now when they are selling rails at $43, they are getting as high as $50 for billets.

Mr. Mather.—According to the latest copy of the "Iron Age," the price of Open Hearth rails for November this year was $46 and that of Open Hearth billets $40. For November 1922, the price of Open Hearth rails was $43 and that of billets $38. So the scale of rails cheaper than billets was probably a condition that only lasted quite a short time. It was quite abnormal.

Mr. Alexander.—It was just for a few months.

Mr. Mather.—There might have been an abnormal demand for billets.

Mr. Alexander.—You will find that the prices of the first quarter of 1923 were much higher than they were six months before or now. It was just a temporary condition.

Mr. Mather.—It does not seem very likely that the steel industry, which was prosperous during the first half of this year, or at any rate very busy, would be selling rails at a loss.

Mr. Alexander.—What dividends did they pay?

Mr. Mather.—It does seem more probable that they would put their prices up at any rate to a price that would have given them a small profit.

Mr. Alexander.—During the war and immediately after the war the price of rails was such that they did not make money on them. I cannot give you details of how these rails prices stayed.

Mr. Mather.—I think that it is fairly general that rails produce a smaller profit per ton than most other sections. That is the experience of most countries, but this works cost of $41 is so high that it seems to me that if they were selling at $43, they would not have been able to meet their full overhead charges. That is what makes me wonder whether this $41 does not include overhead at some stage at any rate.

Mr. Alexander.—I put the works cost of rails between $40 and 41. I might say that these costs that I have got are within a very small percentage correct.

Mr. Mather.—Are you satisfied in your own mind that this works cost does include only the same kind of items of cost as you include in your works cost?

Mr. Alexander.—Yes.

Mr. Mather.—It does not include overhead cost?

Mr. Alexander.—No, because I got these figures from the operating men like departmental managers.

Mr. Mather.—They were not debiting pig, for instance, at any cost including overhead? Take the steel works. Will they debit pig iron at a cost which would include overhead charges?

Mr. Alexander.—Only works cost.

Mr. Mather.—If you are satisfied that this is the actual works cost, I am afraid we cannot get behind it at the moment. Then, in the column for the Canadian figures you have shewn that the Canadian pig iron in 1923 costs Rs. 69 and the ingots Rs. 74-8-0.

Mr. Alexander.—Canadian figures are short tons.

Mr. Mather.—U. S. A. figures are long tons?

Mr. Alexander.—Yes.

Mr. Mather.—I am looking at the spread more particularly. It gives a spread of 6-4-0 approximately. That is a low spread. It is only about half the pre-war spread in the United States. How are these ingots being made?

Mr. Alexander.—Straight basic Open Hearth.

Mr. Mather.—Do you ever hope to get a spread of Rs. 6-4-0?

Mr. Alexander.—We might hope to.

Mr. Mather.—Do you expect to?

Mr. Alexander.—I don't.

Mr. Mather.—The figure is very different from the pre-war American spread; I would be glad if you could explain how it could be done.

Mr. Alexander.—If you look at the other statement you will see that the conversion cost is practically the same in Canada as in the United States—Rs. 24. That is a measure of the operation of an Open Hearth. In Canada they get the benefit in scrap for which they pay Rs. 39, and that gives them a mixture to start with at Rs. 50, as against Rs. 66 in the United States.

Mr. Mather.—Are they using a bigger percentage of scrap?

Mr. Alexander.—They are not charging any more. I would say in the neighbourhood of 50 per cent.

Mr. Mather.—Possibly even more?

Mr. Alexander.—Yes.

Mr. Mather.—Of course their mixture is distinctly higher than yours?

Mr. Alexander.—Yes.

Mr. Mather.—Their final ingot cost comes out only a little higher.

Mr. Alexander.—That is because our conversion cost is Rs. 36 as against their Rs. 24.

Mr. Mather.—If this particular Works is able to buy scrap abnormally cheaply and in very large quantities, it is conceivable that the difference between the cost of a ton of pig iron and the ton of ingot would be small, and that it may possibly account for it. That would not be normal even in Canada.

Mr. Alexander.—Canada is a cheap scrap market because a lot of steel is shipped into it. You see that some steel is made and they only have protection against the steel which they make.

Mr. Mather.—Even with that protection, they have not made all the kinds of steel by any means. You say that quite a lot of steel is shipped into the country.

Mr. Alexander.—Much more than they make.

Mr. Mather.—That possibly accounts for that. In the second table of figures you give us all the way through your material and conversion cost and total and then labour. You give that practically for most of the different items. I take it that labour has already been included?

Mr. Alexander.—Yes.

Mr. Mather.—It is only an abstract to show what the labour figure is.

Mr. Alexander.—Yes.

Mr. Mather.—That is not to be added again?

Mr. Alexander.—No.

Mr. Mather.—You have not quoted the same price per ton of pig iron in each of these two tables. Is that the average or what?

Mr. Alexander.—I know what it was when I was in charge of the Open Hearth. They used to take the hot metal that was charged practically at the current price for the same month.

Mr. Mather.—Do you mean market price?

Mr. Alexander.—Works cost. The blast furnace cost price. The cold metal is worked out according to the value of the material in stock. It would be valued at the cost of manufacture at the time it was put into stock.

Mr. Mather.—So that, if you are using cold pig iron which had been made a year before, you would be charging for that pig iron the actual cost of the time when it was made?

Mr. Alexander.—Yes.

Mr. Mather.—You tell us that the total cost of pig iron in Canada is Rs. 74-2-0.

Mr. Alexander.—It should be Rs. 74-8-0.

Mr. Mather.—You give the material cost as Rs. 63 and the additional cost as Rs. 11-2-0 and the total is Rs. 74-2-0. The point is not just a question of six annas. The point I want to clear up is that you give the total cost of pig iron in the previous table as Rs. 69. There is a difference of Rs. 5. Is it possible that the Canadian figure in the second sheet is for a long ton?

Mr. Alexander.—It might be an error in typing. In the second table under "ingots" section, pig iron is charged at Rs. 69.

Mr. Mather.—But the works cost of pig iron and cost above is higher?

Mr. Alexander.—That is correct.

Mr. Mather.—Do you think that that is because of this system of charging an average cost? Rs. 69 is below the actual manufacturing cost of one ton of pig iron at the time you were there?

Mr. Alexander.—That is right.

Mr. Mather.—And this figure of Rs. 74-8-0 is roughly the cost of pig iron at the time you were there?

Mr. Alexander.—That is right.

President.—I am not quite sure I clearly follow the distinction between conversion and cost above.

Mr. Alexander.—Cost above is the cost above the price of your materials. Conversion cost is the difference between the cost of what you make and what you put in.

President.—Take the cost of ingots where you have got the conversion and cost above close together.

Mr. Alexander.—The difference is the cost of the loss, that is, the stuff that disappears.

President.—That is the wastage?

Mr. Alexander.—Yes.

Mr. Ginwala.—In the case of blooms and rails, for instance, you say that it is the exact difference between the works cost of one ton of blooms and one ton of rails. That is the conversion cost. But in the case of ingots is it not the difference between the total amount of materials used—flux and all—and the total works cost, or is it merely the difference between pig and scrap or the difference between pig and the total works cost?

Mr. Alexander.—The difference between the total cost and the metallic mixture and nothing else.

President.—If you add the figure you have given for mixture and the conversion, you get exactly the same figure you get if you add the cost above to mixture per ton of ingots?

Mr. Alexander.—Yes. Exactly.

President.—The pre-war figures that you have given for the United States—can you tell us for what date they are?

Mr. Alexander.—1909-1913—approximate average for the four years.

President.—Are they for the same works as those to which the 1923 figures relate?

Mr. Alexander.—Practically the same works.

President.—Mr. Mather has asked some questions about the question of the price of rails as compared with the cost of production. Let us take bars. Does the same feature appear in the case of bars. What was the price of bars in America at the time when the cost of production was $45?

Mr. Alexander.—$49.06. That is the basic price. To that is added extras for size and analyses which would amount to two or three dollars.

President.—$45 is the average for all the bars they turn out, so that there is a substantial margin there?

Mr. Alexander.—Yes.

President.—I presume that they were making pretty good profits in April 1923. What were they making their profits on?

Mr. Alexander.—They were taking a certain amount of money from profits which they had made before.

President.—Had costs been going up in America?

Mr. Alexander.—Yes.

President.—Can you give us an idea to what extent they were going up?

Mr. Alexander.—I could not say that exactly.

President.—Still, the costs of production were rising at that time?

Mr. Alexander.—Yes. There was a shortage of labour at that time. They were clamouring for maximum output and there was a great shortage of output.

President.—Had they changed from 12 to 8 hrs. day at that time?

Mr. Alexander.—No. They were still working 12 hrs.

President.—These firms in the United States who were making rails—were they turning out a large quantity of rails? Was that an important item in the production?

Mr. Alexander.—25 to 75 thousand tons a month per mill.

President.—What was rather in my mind was this: what percentage of the total production did rails amount to?

Mr. Alexander.—Very small.

President.—That might explain to a certain extent why it may not be worth while to alter the price of rails.

Mr. Alexander.—The percentage of rails to the total tonnage is very small.

Mr. Mather.—75,000 tons would be a fair proportion?

Mr. Alexander.—That was in one plant. The average total tonnage of the plants per year is about 1·5 million tons. I should say the average rail production would be say 35 to 40,000 tons a month.

President.—That is a substantial proportion. Of the demand of steel in America, a very important item is structural steel—for motor cars and so on.

This cost of blooms—is that not the cost of either blooms or billets?

Mr. Alexander.—Some plants carry them the same and others separate them. It is purely a book cost. They know, from practical experience in the mill that blooms are easier to roll and can be rolled more quickly than billets, and they put it on the basis of so many tons per hour.

President.—That is precisely the point: whether it is possible on a time basis to take the average time it takes to roll bloom or billet and to separate them.

Mr. Alexander.—That is what they do.

President.—If it were done, it would tend to bring your rail cost down and put your bars cost up?

Mr. Alexander.—Some plants carry billets and blooms at the same rate: others separate them. It is a question of book-keeping.

President.—Their cost of producing rails is really a little lower than this because their blooms do not actually cost them so much as the average of blooms and billets.

Mr. Alexander.—There might be a difference.

President.—That is the kind of thing I was going to ask you. What does that difference amount to? Supposing the average figure for blooms and billets together is $35 for the United States, and supposing they were producing equal quantities of blooms and billets, what would be a fair charge for blooms and what for the billets, $35 being the average?

Mr. Alexander.—That will be 36 and 34 or 37 and 33. It is difficult to say exactly, for the reason that it altogether depends on the proportion of blooms and billets rolled.

President.—I suggested an equal quantity of both just to eliminate that complication. It is not a precise figure that I want. How much would be the difference between the cost of blooms and of billets?

Mr. Alexander.—Not more than $2.

Mr. Ginwala.—Mr. Tutwiler told us the other day that the difference between billets and rails was ½ to 1 dollar.

President.—That was about price: I am talking of the costs.

Mr. Ginwala.—He took more or less for comparing the American billets with rails. There is difference between blooms and billets and therefore the difference between blooms and rails is much greater.

Mr. Mather.—He said that sometimes it had been that.

Mr. Peterson.—He said that at that time they were selling it at the same price as rails. Mr. Alexander is telling you that they were selling at a higher price. It is purely a question of fact.

Mr. Alexander.—There were abnormal conditions. Before I came out here, at a plant where I worked we were selling our scrap at a price higher than it cost us to make our ingots.

Mr. Peterson.—At one time, we were selling our rejected rails at a much higher price than our accepted rails.

Mr. Ginwala.—I have got an extract here from the Daily Metal Report. I think you will take it as fairly correct for American prices.

Mr. Alexander.—Yes.

Mr. Ginwala.—Does your pig iron correspond with what is called Valley Pig iron?

Mr. Alexander.—Yes, the same thing.

Mr. Ginwala.—These are figures for January 1923. They give $25 50c. as the sale price of Valley pig iron and here the works cost is given as $24. There is only a margin of 1½ dollars.

Mr. Alexander.—My figure is the average of January, February and March.

Mr. Ginwala.—Mine is 30th January.

Mr. Alexander.—You will find that they fluctuated from 2 to 3 dollars in these three months.

Mr. Ginwala.—It is very unfortunate.

Mr. Peterson.—On this point I have recently put in a statement that the American pig iron manufacturers stated that they could not manufacture at the price at which they were selling.

Mr. Ginwala.—As regards billets you will find that the sale price was $37-50c. in January. That gives a margin of 2½ dollars.

Mr. Alexander.—The only answer I could give to that is that the prices were fluctuating very considerably at that time and mine is the average for three months. I have stated that at the heading of the statement—first quarter of 1923.

Mr. Ginwala.—As regards rails, $43 was the sale price and $41 was the works cost. From these figures you say that they are not making such profits as they would in normal times or they may not be making any profits at all?

Mr. Alexander.—Yes. Just as in the case of pig iron.

Mr. Ginwala.—Let us take the United States pig iron cost, I mean that charged to ingots. It is Rs. 69 : your pig cost is Rs. 36-13. There you have an advantage of Rs. 32-3 over the United States. You start with that advantage; and by the time you come to rails you lose this altogether. That is what has to be explained. Then you retain your advantage in ingots—the U. S. cost is Rs. 90 and your cost is Rs. 70/4, so that you retain an advantage over the United States of Rs. 19-12. You have already lost in the intermediate stage Rs. 12. How do you account for that? You started with an initial advantage of Rs. 32-3 from pig upward which you lost entirely by the time you reached rails.

Mr. Alexander.—We lose Rs. 15 in the Open Hearth, being the difference between Rs. 31 and Rs. 16.

Mr. Ginwala.—I should like you to explain how you lose that.

Mr. Alexander.—This difference between pig iron and ingots is explained by the statement which I just discussed with Mr. Mather—it is due to our high conversion cost in the Open Hearth.

Mr. Ginwala.—Chiefly due to the difference in the cost of refractories?

Mr. Alexander.—No. Low tonnage.

Mr. Ginwala.—Your yield is about 84 per cent.?

Mr. Alexander.—I am speaking of the tonnage produced. That accounts for Rs. 8 to 10 out of the total of Rs. 12.

Mr. Ginwala.—Rs. 10 out of Rs. 12. What about the rest?

Mr. Alexander.—Our big handicap is in Open Hearth.

Mr. Ginwala.—Then you come to blooms. U. S.'s cost is Rs. 105 and yours is Rs. 88/3. You still have an advantage over the United States up to that state of Rs. 16-13. You have lost Rs. 3.

Mr. Alexander.—Yes.

Mr. Ginwala.—That might probably be accounted for by labour?

Mr. Alexander.—Chiefly by the small production.

Mr. Ginwala.—Now take rails. United States cost is Rs. 123 and your cost is Rs. 123. You have lost the advantage altogether in the rail stage. There are two main propositions. Your first big difference, that between your pig and ingots, accounts for Rs. 12. The next big difference is the difference between your blooms and rails; these two things account for the main difference between the pig and the final stage.

Mr. Alexander.—If we had mills which would produce the same tonnage of rails as the mills where I got these figures, and accounted on the same basis, our cost would be just the same as theirs. We lost here Rs. 10 due to the fact that whereas in America second class rails go in as production, our second class rails do not go as production. That accounts for Rs. 10 in the difference in costs. Otherwise our cost would be Rs. 113 as against Rs. 123.

Mr. Ginwala.—What is your percentage between your first class and second class rails?

Mr. Alexander.—Our second class rails would run to about 8 per cent.

Mr. Ginwala.—And in America?

Mr. Alexander.—About the same.

Mr. Peterson.—There is difference in the system of accounting. In America they take all second class rails as finished product, but we take them as scrap. If we adopted the same system as that, the difference between the costs would be Rs. 10 less. Strictly speaking, our works cost compared with that of America would be Rs. 113 as against 123.

Mr. Ginwala.—What difference does it make in the end with regard to the sale price?

Mr. Alexander.—They pay as much for second class as they do for first class rails—$43.

Mr. Ginwala.—Are American people so unbusinesslike?

Mr. Alexander.—For certain purposes.

Mr. Peterson.—That probably is one explanation for the low price of rails.

Mr. Alexander.—When the Railway sends out an order, they classify and say that 5 per cent. of the order will be taken in second class and short lengths and so forth.

Mr. Ginwala.—Without any abatement in price?

Mr. Alexander.—Yes.

Mr. Mather.—In your works cost you do not count second class rails as production, as tonnage by which you divide your production cost in the rail mill?

Mr. Alexander.—No.

Mr. Mather.—But do not you deduct from your total departmental costs the value of the second class rails?

Mr. Alexander.—As scrap only.

Mr. Mather.—You do not deduct the value at the rails price, but at scrap price, which is very different of course from the price at which you sell the rails?

Mr. Alexander.—At Rs. 20 a ton, but you see the biggest factor is the operating charges and it is divided by the larger tonnage.

Mr. Mather.—If you are not going to count your second class rails as production, then you should credit the mills with the amount that you got for these second class rails.

President.—I thought the value credited on account of second class rails was something higher than that of scrap.

Mr. Ginwala.—In the case of bars also you are in more or less the same position. U. S.'s cost for billets is Rs. 105 and yours is Rs. 88-3-0.

Mr. Alexander.—This is for blooms.

Mr. Ginwala.—I am trying to point out to you that you lost this advantage that you got over the United States in rails, but you also lose it in the same way in bars. You had an advantage of Rs. 17, being the difference between their cost of Rs. 105, and your cost of Rs. 88-3-0, but the United States total works cost is Rs. 135 against your cost of Rs. 134-15-0, exactly the same.

Mr. Alexander.—That could be accounted for by the smaller tonnage, antiquated mills, etc. If we were producing the same tonnage as they do at Home our cost would be the same.

Mr. Mather.—But your overhead charges would be higher and your mills would be much more expensive to produce this tonnage?

Mr. Alexander.—Not very much. They were built at the same time as ours were built.

Mr. Mather.—Are they of the same type? The capital expenditure on account of these mills would be very much heavier.

Mr. Alexander.—Not exactly. Our mills, even when they were built, were not up to date. The mills at the United States built at the same time as ours would produce two to three times tonnage of ours.

Mr. Ginwala.—Taking the case of bars, you get a good deal of scrap there and you credit at Rs. 20 a ton.

Mr. Peterson.—The system has been altered twice. Originally, we were charging for the scrap Rs. 20 a ton, and afterwards we credited the rails actually sold at the pig iron price.

Mr. Ginwala.—Still there is a considerable amount of scrap there—over 15 per cent. You credit the scrap at Rs. 20 per ton; therefore your works cost goes up.

Mr. Alexander.—If scrap were credited at a higher price, then we would have to charge it to the Open Hearth at a higher price which would make a higher price on ingots.

Mr. Ginwala.—Having started at that stage, the difference in the cost of conversion appears much higher than it otherwise would.

Mr. Alexander.—Yes, but you cannot credit your scrap at a higher price than pig iron.

Mr. Ginwala.—It increases the conversion cost at that stage? Leave alone the metal cost.

Mr. Alexander.—Yes.

Mr. Ginwala.—It becomes a little unreal at that stage?

Mr. Alexander.—That is quite true.

Mr. Ginwala.—You would put up the cost of ingots conversion and put down the real conversion cost of rails and bars?

Mr. Alexander.—No, we would not, to any great extent. We would have a higher price for ingots which would result in a higher price for blooms, and in the rails it will be about the same.

Mr. Ginwala.—The final rails cost would be about the same, but the difference between the price of pig iron and ingots would be bigger and that between rails and blooms would be smaller?

Mr. Alexander.—That is right.

Mr. Ginwala.—The prices are unreal the moment you have your scrap at Rs. 20: you are charging not even the cost of the pig all along; therefore you show that your metal costs less than it does and your conversion costs increase in proportion?

Mr. Alexander.—Yes.

Mr. Peterson.—Scrap has no actual value.

Mr. Ginwala.—That may be so. You cannot charge scrap at Rs. 20 when you take Rs. 34 as the works cost of pig. Therefore the effect produced in our minds is this that you charge less for your metal at all stages practically wherever scrap comes in, and your conversion cost increases, whereas your figures, if they were kept on one basis, would show that the metal cost is more than it is and the conversion cost is smaller.

Mr. Alexander.—In the end you arrive at about the same figure.

Mr. Ginwala.—The point we are investigating is the question of conversion cost not the cost of materials.

Mr. Peterson.—Our cost accounts have been kept on this system for purposes of comparison and not for this enquiry. Your point of view is of course perfectly correct.

Mr. Ginwala.—You pay Rs. 25 for scrap when you buy outside?

Mr. Peterson.—We are not buying scrap from outside. We should credit the scrap at the pig iron price at least in order to get at the real cost of conversion as compared with other countries.

Mr. Ginwala.—You use different quantities at different times, but the point is this that there would appear to be some difference in the two methods, but if your material cost goes up your conversion cost goes down: it shows a better practice than these figures.

Mr. Peterson.—That is true. We can have it done right through the cost sheet. It won't really affect the ultimate cost. But from our point of view, it saves a considerable amount of examination of figures.

Mr. Ginwala.—We want to see what your practice is. This gives rather a different idea, I mean, judging by the figures you have given.

President.—By taking your scrap so low you overstate your natural advantages with which you are starting when you start to make pig iron and steel.

Mr. Ginwala.—Though the results in the end would be the same the proportions will be altered.

Mr. Peterson.—We will have it done. Which month do you want it for?

Mr. Ginwala.—Say, the present month.

Mr. Peterson.—You do not want details, you simply want the total I suppose?

Mr. Ginwala.—Yes.

Mr. Mather.—In that case had not we better have it in the way in which you at present keep your accounts?

Mr. Peterson.—You want the amount of scrap credited at either the price which is obtained for it in the case of defective rails or at the cost of pig iron?

Mr. Ginwala.—It should not be less than pig iron in any case.

Mr. Mather.—And also the cost of the pig iron for the same period.

President.—You have told us that your second class rails come to about 8 per cent. of the first class?

Mr. Alexander.—6 to 8 per cent. of the total. That is only an average that I can give you.

President.—Supposing you make 100 tons of rails of which 92 per cent. are first class and 8 per cent. are second class. You have given your conversion cost from blooms to rails as Rs. 34. If you divide your total expenditure only by the 92 tons of first class rails, by multiplying 92 by 34 you get your total expenditure at that stage on the conversion?

Mr. Alexander.—That is right.

President.—Now, that comes to Rs. 3,128. If I now divide by 100, according to the American system of accounting, the conversion cost goes down from Rs. 34 to Rs. 31·28: that is not a difference of Rs. 10; it is only a difference of about Rs. 2¾. In order to get a reduction of anything like Rs. 10 you must have a much higher percentage of second class rails. Supposing you had taken no credit for your second class rails the cost only goes down by something less than Rs. 3.

Mr Peterson.—We don't quite understand the calculation.

President.—It is only the conversion cost which is affected, I take it. It is the total cost of production divided by the total tonnage; instead of dividing by 100 we divide by 92. It is the total cost you have got to divide. In America they take the whole cost of production and divide by 100 whereas you divide by 92.

What credit did you take for second class rails this month?

Mr. Peterson.—I will give you the total figures. The total cost of production is Rs. 1,11,67,000; the total credit for scrap is Rs. 22,18,000 and the total production was 96,273 tons.

President.—Are your second class rails shown separately? Do the cost accounts show the rate at which you took credit for your second class rails?

Mr. Peterson.—That is shown at Rs. 80.

President.—In so far as you take credit for the second class rails at Rs. 80 per ton, the difference between your final cost and the final cost on the American system will not be Rs. 10 but something very much less than that.

Mr. Peterson.—Some of them, and some of them more. It depends entirely on the sales.

Mr. Ginwala.—On this point of rails, does it mean that the railway specifications in the United States are not as rigidly observed as ours?

Mr. Peterson.—The railways there generally use them on sidings and places where any first class rails are not necessary.

Mr. Ginwala.—Does it mean that the quantity of rails used in America for sidings is about 8 per cent. of the whole?

Mr. Peterson.—They will take 5 per cent. of the order in second class rails.

Mr. Ginwala.—And here?

Mr. Peterson.—Nothing.

Mr. Ginwala.—That is to say, in your rolling programme you cannot make any allowance, like the American rollers, that you will be able to sell 5 per cent. of second class rails?

Mr. Peterson.—No.

Mr. Ginwala.—I want to find out how much your cost of production has gone up in consequence of the plant being rather less up-to-date.

Mr. Peterson.—I think you had better ask Mr. Tutwiler about that. This is much more a matter of general knowledge of the whole plant. If you want to ask any question about the actual manufacture of steel in the Open Hearth furnace, or questions about the mills, Mr. Alexander will be the person to ask.

Mr. Ginwala.—I see that some of your Open Hearth furnaces were constructed at a time when . . . .

Mr. Peterson.—I don't think Mr. Alexander was here when the plant was constructed; Mr. Tutwiler was.

Mr. Ginwala.—Will it be possible for you to scrap them?

Mr. Peterson.—On a question of that kind ask Mr. Alexander, but if you want to know why certain things were done Mr. Alexander won't be able to tell you. He is prepared to give information on the present plant.

Mr. Ginwala.—You have got 7 Open Hearth furnaces?

Mr. Alexander.—Yes.

Mr. Ginwala.—And two Duplex?

Mr. Alexander.—Yes.

Mr. Ginwala.—And how many other furnaces?

Mr. Alexander.—7 stationary and two Duplex.

Mr. Ginwala.—Of these 7, I take it, 4 were constructed during the war?

Mr. Alexander.—No, two were constructed during the war and one after the war.

Mr. Ginwala.—Three were constructed during the war, four before and the two Duplex?

Mr. Peterson.—Two during the war and one after.

Mr. Ginwala.—Is it the idea of the Company to do away with the stationary furnaces?

Mr Peterson.—That is a question we cannot answer until we see how the new plant works. Perhaps we might make alterations.

Mr. Ginwala.—What about the 4 earlier ones?

Mr. Peterson.—I think this is a question you had better ask Mr. Tutwiler, because I think the early ones were altered in their design and he can explain any changes that were made and that sort of thing.

Mr. Ginwala.—You have not worked your Duplex plant for a sufficiently long time?

Mr. Peterson.—We cannot give you an idea whether it would pay to instal a third Duplex. We can only say that after we have operated the new process for, say, about 12 months.

Mr. Ginwala.—Will Mr. Alexander give us some idea of a comparison between your stationary furnace as compared with the same kind of American furnace, and say whether they are inferior or superior to them?

Mr. Peterson.—I see no reason why you should not ask him any question of that kind.

Mr. Ginwala.—What we have got to consider is this: has the cost of production gone up in consequence of the deterioration of the furnace or their not being what they ought to have been? My point is this: is there any increase in the cost of production owing to the furnace being obsolete or defective as compared with an American furnace of the same kind?

President.—We were told when we were here last that the conditions of the furnaces had deteriorated owing to the way they were driven during the war. What precisely does that mean? I have never clearly understood what precisely happened. What is the result that is producing this higher cost on account of the way they were driven during the war? I understand that the condition has lasted on and is still continuing.

Mr. Peterson.—I don't think it has lasted. It has improved after the war. I am not talking of 1918-19. That is all in the report of the late Dr. McWilliam, who was put on to examine the question of the condition of the furnaces. At the end of his report he says that he left the plant in very good order.

President.—That was urged in the previous examination to explain the reasons which resulted in the increased cost.

Mr. Peterson.—I think there is a confusion. What we said was that we would not have constructed that type of furnace unless we had to.

President.—It was not that. I think we had better put it to Mr. Tutwiler.

Mr. Ginwala.—There are two aspects to this question. First of all you have got 4 furnaces which under ordinary practice of steel makers should have been scrapped long ago.

Mr. Peterson.—I don't think they would have been scrapped.

Mr. Ginwala.—Having regard to the amount of depreciation you are expected to write off in steel works, don't they expect to renew the plant every 12 years?

Mr. Peterson.—That is fairly a question to ask Mr. Alexander.

Mr. Ginwala.—That applies to the 4 old ones. With regard to the later ones is there anything in those furnaces which has increased your cost of production?

Mr. Peterson.—What you want to know is—had the four old furnaces been in America, would they have been scrapped?

Mr. Ginwala.—The point is that these four furnaces would in the ordinary course be scrapped after they had done their 12 years. You have not scrapped them, you are still using them. Does not that increase the cost of production?

Mr. Peterson.—'No' comparing our cost sometime back with the present cost, but 'yes' in comparison to the cost in America.

Mr. Ginwala.—What difference does it make between your cost and that of America because of the antiquated design?

Mr. Alexander.—If they had been all right we would have built the new ones like them.

Mr. Ginwala.—What difference has it made to the cost of production; how much difference between your cost and the American cost does it make?

Mr. Alexander.—I cannot reply to that off-hand.

Mr. Ginwala.—You can give us some idea. It is rather important. What we have got to consider is this: supposing a new plant were started and more or less everything was up to date, at what price would that manufacturer be able to sell his steel?

Mr. Alexander.—Rather than making a guess on that, I think it would be more logical to take our costs on the 4 old furnaces and the 3 new ones.

Mr. Ginwala.—Take that. You keep a separate account of each furnace. Take the worst and compare with the best.

Mr. Alexander.—We would have to compare the tonnage produced on the two different types of furnaces per furnace and also the cost of repairing.

Mr. Ginwala.—Show a comparison by which we can see in terms of money the difference.

Mr. Peterson.—We can do it. It means calculation.

Mr. Ginwala.—Don't you yourself want to know the difference between the old and the new plant for your own purposes?

Mr. Peterson.—No, because from our point of view the question is whether we can afford to scrap the old ones and whether we can afford to build new ones. It might be desirable to replace some of the old furnaces, but we have not enough money to do so at present.

President.—It is very important to know to what extent your cost of production is high because the plant is no longer up-to-date. We cannot help taking that into account so far as we can ascertain the facts.

Mr. Peterson.—That will have to be worked out furnace by furnace.

Mr. Ginwala.—Do it any way you like but give us some facts.

Mr. Peterson.—You want us to compare the old Open Hearth furnaces with the 3 new furnaces?

President.—Do you regard the 2 new Open Hearth furnaces as a reasonably good design for the present day?

Mr. Peterson.—Yes.

Mr. Ginwala.—Then a comparison between the old ones and the three new ones is what we would like to have. Strike the average if you like. Here you have lumped the whole thing together.

Mr. Alexander.—Operating costs, yes.

Mr. Ginwala.—Group the four old ones together and the three new ones together and give us the works costs for each group.

Mr. Alexander.—Yes, that could be done.

Mr. Mather.—Can you charge gas in proper proportion between different furnaces?

Mr. Alexander.—It will be more or less on tonnage basis.

Mr. Mather.—More gas may be used in one group of furnaces than in the other?

Mr. Alexander.—That is possible.

Mr. Ginwala.—You have got a separate account for each furnace and in allocating gas, for instance, you do so by tonnage?

Mr. Alexander.—We don't keep a separate account for each furnace except for the cost of upkeep—operating cost "no."

Mr. Ginwala.—What do you do as regards blast furnaces? Do you keep separate accounts for blast furnaces?

Mr. Alexander.—Yes, separate cost sheets are maintained.

Mr. Ginwala.—There also it is the same thing. You have got old blast furnaces and new ones. I see that between old blast furnaces and new ones there is a substantial difference in the cost of production.

Mr. Alexander.—We sent you those costs.

Mr. Ginwala.—I want the summarised results.

Mr. Alexander.—We have already stated the cost of the new blast furnaces.

President.—You have not given us separate costs of blast furnaces.

Mr. Ginwala.—I do not know the various blast furnaces, when they first came into operation, what has been done with them and so on. I want you to classify them according to the older ones and newer ones.

Mr. Peterson.—What exactly do you want?

Mr. Ginwala.—You have got two different plants. That goes right through from your coke ovens to the rolling mills.

Mr. Peterson.—You want to see how the costs are maintained in the new plant?

Mr. Ginwala.—That is the point. I find that some coke costs Rs. 18 a ton and other Rs. 12 a ton or something like that. At the time of charging blast furnaces, you strike an average. That is right for your purpose. What I want to know is the difference between the cost of production in the old plant and the new plant—coke ovens, blast furnaces, Open Hearth, etc.

Mr. Alexander.—It is all summarised in the cost sheets. If you say what you want, we can make an analysis. If you want only the final figure, it can be done at once.

Mr. Ginwala.—You take your best coke oven result. You put that in the best blast furnace plant and then you put that again in the best Open Hearth and so on.

Mr. Peterson.—The blast furnace which is working best at present is an old one.

Mr. Ginwala.—That is your look out. There are two different kinds of plants.

Mr. Peterson.—If we give you the cost of the finished product per ton in each of these plants, it would give you the information you want.

Mr. Ginwala.—Please give us also the total producton of the whole group, so that we could see what the proportion is between the old and the new.

Mr. Alexander.—That cannot be done. You cannot compare the Open Hearth with the Duplex.

President.—In the case of Open Hearth furnaces, what we really want to know is the final cost per ton in each case.

Mr. Alexander.—We will compare the four old furnaces with the three new ones, and give you the final cost per ton in each case.

Mr. Ginwala.—You could not take the best of each and work out the result?

Mr. Alexander.—Impracticable.

Mr. Ginwala.—Then do it with the next best.

As regards the three new furnaces, can you give us some general comparison between your furnaces and the modern American furnaces?

Mr. Alexander.—These three new furnaces were copied from American drawings. Our furnaces were built at about the same time.

Mr. Ginwala.—Do they work as satisfactorily as the United States furnaces? How do they compare?

Mr. Alexander.—We go back to the old thing again. We don't get the same tonnage in India as they do in America on account of climatic conditions and other things.

Mr. Ginwala.—That is the only disadvantage?

Mr. Alexander.—The disadvantages are enumerated in my note.

Mr. Ginwala.—With regard to design and everything else it is of the same type?

Mr. Alexander.—Yes.

Mr. Ginwala.—So far as improvements go, there are none to be made?

Mr. Alexander.—No.

Mr. Ginwala.—About this Duplex, in what way is it not working as it ought to? What is the principal defect?

Mr. Alexander.—It is a Duplex process. There are two processes.

Mr. Ginwala.—You are not using the Duplex process?

Mr. Alexander.—The plant is not fully completed yet.

Mr. Ginwala.—When do you expect to complete it?

Mr. Alexander.—In a month or so.

Mr. Ginwala.—I am asking you because your average cost of production is going up.

Mr. Alexander.—Sometime early next year—January or February—everything would be complete.

Mr. Ginwala.—With regard to pre-war comparison, I will have to ask Mr. Tutwiler?

Mr. Peterson.—Yes. Perhaps you would like to ask Mr. Alexander about the Duplex process as to whether it is suitable or not.

Mr. Ginwala.—I want to ask some questions about the revised figures that you have given about labour.

Mr. Peterson.—I think that you had better examine Mr. Tutwiler on that point.

Mr. Mather.—There are just one or two points I want to ask you about your reply to Mr. Homi's pamphlet. Mr. Homi in his written statement told us that the difficulties on account of climate during hot weather were counterbalanced by the difficulties experienced in America during winter. He told us that that interfered with the supply of raw materials for five months. I asked Mr. Homi whether he intended that to apply to the transport of ore only or to other materials too. Mr. Homi then told us that coal supply was generally interrupted for a period measured by months in the Pittsburgh district. I have no personal knowledge of that, and I have not come across any statement of that kind before. Can you tell me whether that it is correct from your experience?

Mr. Alexander.—I have worked in the Pittsburgh district for seven years. I never knew of it.

Mr. Mather.—He said that coal supply in the Pittsburgh district came in by water or canal, and that supply was interrupted pactically every winter for a considerable period.

Mr. Alexander.—That is not true as far as I know from my experience.

Mr. Mather.—Then, on page 4 of your letter in discussing the question of fuel economy you say that it is the ideal condition to be able to run the whole plant from the gases evolved from coke ovens and blast furnaces and that you are not aware of any steel plant that has yet reached that ideal condition. I have here the report of a British Government Commission that went early in 1919 to examine the steel Works in the area occupied by Allies in Germany and also in Lorraine and Luxemburg and they report that one of the French Works—as a matter of fact this Works was always in France—makes about 450 thousand tons of pig iron and about 350 thousand tons of finished steel. The only coal that they use in that plant is the coal required for coke ovens *plus* an additional quantity of coal which amounts to rather less than 100 lbs. of coal per ton of finished steel.

Mr. Alexander.—But still they use some.

Mr. Mather.—It is less than one cwt. per ton of finished steel. At the same time in another part of the same report it is stated that another Works in Luxemburg which I inspected with the Commission imports its coke from Germany. It has no coke ovens at all, and so no coke oven gas, but runs the whole works from the blast furnace gas. There are several points of difference—some of them unavoidable—between these plants and yours, but I think that that indicates that it is possible to get very near the ideal. They make their ingots by the basic Bessemer process, but they use practically no coal for boilers or for the rolling-mills.

Mr. Alexander.—My statement was that I did not know of any plant where the ideal condition had been reached. I knew that Skinningrove very nearly reached that. I do not know yet of any who absolutely do without external fuel. Of course you say that they come very near that.

Mr. Mather.—That is very much nearer indeed than what you are doing.

Mr. Alexander.—Yes.

Mr. Mather.—You admit that there is much room for improvement?

Mr. Alexander.—I go on to say that problems like this require years of study and the plant in France is perhaps much older than this plant.

Mr. Mather.—One of them is newer. It came into operation in 1912.

Mr. Ginwala.—Is it a question that the older the plant gets, the less it consumes or is it a question of longer experience that you need?

Mr. Alexander.—It is a question sometimes of organization—especially in a country like India where you are organising.

Mr. Mather.—On page 6 you discuss the question of the percentages of pig iron and scrap used in the Open Hearth. The use of scrap, you say, is, to all intents and purposes, limited to the amount of scrap that you actually produce in your own plant and however desirable it may be to use a higher percentage of scrap, you won't be able to do it until you make the scrap.

Mr. Alexander. That is right.

Mr. Mather.—I just want to know approximately what the possibilities are in that direction. In this flow sheet you have given us, you don't propose to use any scrap in the Duplex, which I can understand, and you propose to use in your old Open Hearth furnaces about 55 per cent. iron and 45 per cent. scrap, but then I notice that you are going to use about 26,000 tons of mill scrap in the blast furnaces.

Mr. Alexander.—That is the surplus scrap.

Mr. Mather.—Do you think that this mill scrap of 26,000 tons would generally be suitable for the Open Hearth?

Mr. Alexander.—Yes.

Mr. Mather.—You tell us that the best mixture is 60 per cent. hot metal and 40 per cent. scrap. Do you think that it might be economical in the long run, instead of putting that mill scrap into the blast furnaces, to put it in the Open Hearth furnaces and thus increase the percentage of scrap still further? My reason for asking you is that the cheapest steel that comes into this country comes from Belgium and Luxemburg and in those districts in the Open Hearth plants it is almost a general rule to use about 70 per cent. scrap and on that account they get a very big tonnage. In the report I have already referred to it is stated that one of the Works we visited uses about 70 per cent. scrap and 30 per cent. cold pig iron and still get 20 to 24 casts per week.

Do you not think that it might be possible to increase your output very considerably by putting this mill scrap, which is allotted to the blast furnaces, into the Open Hearth?

Mr. Alexander.—We certainly intend to do it. We have already got up to 25 to 35 per cent., and we would go on putting until we could charge all the scrap we can and not unduly delay our heat time.

Mr. Mather.—So you agree that you are limiting your consumption of scrap in the old Open Hearth furnaces and putting other useful scrap in blast furnaces not because you want to do it, but because you have not the mechanical facilities to charge **more?**

Mr. Alexander.—That is so. This refers to 60 and 40, and it has nothing to do with what our practice will be in future.

Mr. Mather.—I have compared this statement with the flow sheet which shows 55 and 45 per cent.

Mr. Alexander.—There is no connection between this statement and the flow sheet, or what we intend to do.

Mr. Mather.—You will use all the scrap you can in the Open Hearth except in so far as you are limited by the possibilities of charging. That is a matter of design.

Mr. Alexander.—Absolutely.

Mr. Mather.—On page 7, towards the bottom, you discuss the Duplex plant and the possibilities of the Duplex process in other countries. You say that in England and in Canada the basic Bessemer Duplex process may have been abandoned, but yours is the acid Bessemer?

Mr. Alexander.—Yes.

Mr. Mather.—I am not aware that basic Bessemer Duplex has ever been started in Canada.

Mr. Alexander.—It was started. They started in the basic Bessemer and finished it in the Open Hearth.

Mr. Mather.—They started in the basic Bessemer?

Mr. Alexander.—We start in the acid Bessemer. They have high phosphorus pig iron and they get a big slag volume in the Bessemer. They have over 1 per cent. phosphorus.

Mr. Mather.—That would not be done in Canada.

Mr. Alexander.—There is only one plant.

Mr. Mather.—Most of the Canadian pig is low in phosphorus.

Mr. Alexander.—That is only a local ore.

Mr. Mather.—That is a very exceptional thing.

Mr. Alexander.—Yes.

Mr. Mather.—In England, I am not aware of anybody having worked basic Bessemer Duplex process.

Mr. Alexander.—It was tried and abandoned.

Mr. Mather.—That was hardly more than an experiment.

Oral evidence of Mr. T. W. TUTWILER, General Manager of the Tata Iron and Steel Company, and Mr. J. C. K. PETERSON, C.I.E., recorded at Jamshedpur on the 17th December 1923.

President.—I think that it will be most convenient to begin this morning with what after all is the main point we have to investigate, *viz.*, that the present cost of production of steel in India is so high that the manufacturer in India is unable to sell in competition with steel that comes from other countries. That is the fundamental difficulty that we are up against. From what we have heard, the main reason why the cost of production is higher in this country is that the outturn of the plant at Jamshedpur is low, compared with the outturn of works of a similar size in other countries. That is generally speaking true, is it not?

Mr. Tutwiler.—I would not like to say that. I would say, as far as my experience is concerned, I have never seen a mill, in any other country, of the size that we have here, rolling so many varied sections.

President.—That applies to one particular part of the plant. Mr. Alexander told us the other day that the outturn of similar furnaces in America was 20 or 25 per cent. higher.

Mr. Tutwiler.—I should say it is.

President.—We have had a good deal of evidence on the subject which had suggested certainly to my mind the view that the output of the whole plant at Jamshedpur was, comparatively speaking, low as compared with other countries.

Mr. Tutwiler.—I should say so.

President.—Do you accept that as a general statement?

Mr. Tutwiler.—Yes.

President.—Now which part of the plant is it that limits the extent of your production?

Mr. Tutwiler.—The Open Hearth.

President.—That is to say, if you could produce more ingots, you could roll them in your existing mills.

Mr. Tutwiler.—That is right.

President.—Then, in that case, the Open Hearth is really the crux of the whole problem.

Mr. Tutwiler.—Yes. Can I add a little there?

President.—Certainly. I want your help.

Mr. Tutwiler.—When the original Open Hearth plant was built, we erected stationary furnaces. We have gone now to other furnaces. When these furnaces come into operation, then we will be in a better position to compete with foreign countries than we are to-day.

President.—Do you mean when the Duplex plant comes into operation?

Mr. Tutwiler.—Yes, it is a different plant. When the original furnaces were constructed I should say that they were as modern as any that we could get at that time.

President.—It is not only a question of the design of these furnaces but whether, under the conditions, as they exist in India at present, it is possible to get as high an outturn as in America. I am thinking of the original plant entirely. I have some questions to ask about the Duplex, but

I will postpone them. I am confining myself at the moment to the old plant.

Mr. Tutwiler.—We would never get the same tonnage that they get in a temperate climate.

President.—Then, there may be other causes as well but, at any rate, we start with this: that you cannot, from the existing plant, get the same outturn as in other countries they can get from a similar plant.

Mr. Tutwiler.—That is right.

Mr. Ginwala.—Do you class that as a permanent difficulty?

Mr. Tutwiler.—I acknowledge that as a permanent difficulty, but I say that other things, which we have, will more than off-set that, *viz.*, the location of the plant, cost of raw materials, etc. As far as the Open Hearth itself is concerned, we will never be able to get the same production out here that they get on a similar plant in a temperate climate.

President.—I understand that of the 7 furnaces that you have at present four are the original furnaces but with some changes made after they were first erected, and that three were built towards the end of the war and after the war.

Mr. Tutwiler.—Two additional furnaces were started in 1916 and one more additional furnace in 1920.

President.—I understand from what Mr. Alexander told us that these three newer furnaces in design compare reasonably well with furnaces in use in other countries.

Mr. Tutwiler.—Yes. They were taken from the drawings of the furnaces of the United States Steel Corporation at Gary.

President.—Can you give us any figures or approximate figures as to how the outturn from these three furnaces compares with the outturn from similar furnaces in America or can you put it in the form of a percentage? What I am really trying to get at is what the difference in output amounts to.

Mr. Tutwiler.—In tons?

President.—Yes, in tons per furnace?

Mr. Tutwiler.—I should say 20 per cent. less.

President.—You think that under conditions as they are to-day that about represents the difference in the outturn.

Mr. Tutwiler.—Yes, as they are to-day; but we can improve on our practice of to-day even in the old plant and this will be done by preparing our bottom making materials by burning them with gas instead of coke. This method of calcining the dolomite and limestone should reduce our bottom trouble, and will therefore give us increase in the number of tons.

President.—That is to say, there would be fewer stoppages for repairs.

Mr. Tutwiler.—We now have to spend more time making bottoms. While we are doing that, we could be making steel.

President.—You work three shifts on the Open Hearth furnaces.

Mr. Tutwiler.—Yes. We keep one furnace off all the time. We work only six.

President.—Owing to the necessity for repairs and so on, that number drops to five or sometimes even less.

Mr. Tutwiler.—In the early days I have seen, when we had only four furnaces, none working out of the four, but that has gradually improved and I think we could say that on an average we work six furnaces. Sometimes we are working six and sometimes we are working seven, but I should say one furnace off always.

President.—That represents the normal state of affairs.

Mr. Tutwiler.—Yes.

President.—Coming now to the question of what exactly the causes are for the low outturn as compared with similar plants in other countries; in the first place, the four original furnaces, I understand, must now be regarded as somewhat out of date.

Mr. Tutwiler.—They are out of date, but I should not say that we could scrap them.

President.—I am not suggesting that. All that was in my mind was this. As improvements are made in plant and machinery year after year, it becomes less and less profitable to operate an old plant. As to the stage you have reached as regards these furnaces, it may be that although you cannot operate them as profitably as you would wish, yet they are still worth operating.

Mr. Tutwiler.—I think that the present open hearth plant will be more efficient after we begin manufacturing more steel than in the past; the cost of making steel on the present stationary furnaces must go down because we have carried here as high as 85 per cent. of hot metal and 15 per cent. of scrap. That is about as high as we could take now. But when the new mills come into operation we could take additional scrap, and we will carry about 45 per cent. scrap on the old furnaces and 55 per cent. of hot metal. Naturally the cost of production will go down on the whole plant.

President.—The effect will be to reduce the period required for each heat.

Mr. Tutwiler.—It would not reduce the period but your scrap will be cheaper than pig iron. We waste the scrap from our mills.

President.—Would it?

Mr. Tutwiler.—I can only judge by what has been done in other countries. Taking the United States for instance in Pittsburg heavy mill scraps such as the scrap we get is worth about $16 a ton. In Boston scrap is sold about $9 a ton. It all depends upon the location. Canada, for instance, does not work up all the scrap she makes. Therefore you can buy and I have seen others buying at $3 or 4 a ton.

President.—It is not quite clear in what sense your scrap is cheaper than pig. I understand there is no effective demand for it at present.

Mr. Tutwiler.—That condition exists in other countries.

President.—After all it is very difficult to see how you can say really that it is cheaper than your pig iron.

Mr. Tutwiler.—I can tell you that during the early part of the war we were able to buy scrap for Rs. 20 a ton. Now take the case of subsidiary industries. I cannot take more of their scrap. We shall make more scrap ourselves than we need.

President.—You have been paying about Rs. 20 to the subsidiaries?

Mr. Tutwiler.—We paid the Tinplate Company the same price as our pig iron scrap. Now our scrap has increased so much that I cannot take any more of theirs. If it is going to be a drug on the market, you might be able to buy it for $3 or even less. It is nothing but waste to them.

President.—That is the beginning of a market for scrap here. It no doubt comes with the growth of various industries.

Mr. Tutwiler.—Unless there are enough furnaces to melt this scrap, it will be a drug on the market.

Mr. Ginwala.—Would it be right to take the cost of material charged at less than the works cost to you of these materials? That is what it really comes to. You could not manufacture scrap, for instance, at less cost than your pig iron.

Mr. Tutwiler.—You could manufacture. This company will have something like an excess of 47,000 tons of scrap per year after using all we can in the present Open Hearth plant.

Mr. Ginwala.—If you debit for scrap the market price of scrap to the works, why don't you take the market price of pig?

Mr. Tutwiler.—We charge our scrap at Rs. 20 a ton.

Mr. Ginwala.—That is very much less than what you could buy it for.

Mr. Tutwiler.—It is bought from outside for that amount.

Mr. Ginwala.—As it happens, of course, you are able to get scrap at that price. Looking at it from your point of view, can you really charge yourself less than what it costs you at your own works?

Mr. Tutwiler.—We take that scrap off from the production. We get 80 per cent. yield when scrap is omitted.

Mr. Ginwala.— Are you not charging yourself rather less when you give yourself credit than when you debit the scrap to yourself?

Mr. Tutwiler.—I don't think so. The system followed in other countries is that they take the price of the scrap at what they can buy for.

Mr. Ginwala.—If you don't produce scrap, will you get it at Rs. 20 a ton?

Mr. Tutwiler.—Near Boston there are some Open Hearth furnaces. They use only a small quantity of pig iron. They use what we call light scrap, but these furnaces could not give good results. Their costs are nothing like ours. They are much higher.

President.—Mr. Alexander gave us the cost of scrap in Canada as $13 and in the United States of America as $20 for the concern for which he was giving us figures. It of course is a great deal higher than the rate at which you have been taking scrap.

Mr. Tutwiler.—We are not in the same position as Canada is.

President.—I quite admit that it does not make any difference to the final cost of your product at what price you are taking the scrap, so long as you are using nothing but your own scrap. But when you begin to have a surplus it is not quite so clear. It might to a certain extent affect the cost of your final product. It would depend on what you can sell it for.

Mr. Tutwiler.—That is not considered in steel practice in other countries. When you get extra scrap, you build another Open Hearth furnace. That is what we have tried here to do. It never pays you to sell your scrap.

President.—It is more valuable then to steel makers than it can be to anybody else?

Mr. Tutwiler.—Take the case of Pittsburgh where there are great steel sellers. They have to buy scrap because they can put in more scrap in their Open Hearth furnaces than they can produce. That is why the price of scrap is so much higher there than it is out here.

President.—We diverged on to this question of scrap from another point. We started with the design of original furnaces. The change that was made in them after the original construction was that they were enlarged but not enlarged completely so to speak?

Mr. Tutwiler.—We could not change the checkers as they are too deep in the ground.

President.—They were originally 40 tons furnaces, were they not?

Mr. Tutwiler.—Yes. They make 55 to 57 tons. These furnaces will work better. By working more scrap, they last longer than they would working the higher percentage of hot metal.

President.—Can you tell us why exactly?

Mr. Tutwiler.—Because working the higher percentage of hot metal the stuff carried over blocks up the checkers and so forth. Our scrap is clean heavy mill scrap and we will get a good many more heats out of our furnaces than we would working on the higher percentage of iron. We don't need such intense heat. There is no need to carry a heavy slag. So, we get a better life out of the furnaces.

President.—You don't get any actual reduction in the time taken work the heat.

Mr. Tutwiler.—No.

President.—What I understood was that one of the results of using more scrap was that there would be a smaller amount of impurities requiring to be removed in the Open Hearth furnaces.

Mr. Tutwiler.—We will not work the heat in less time. I should not like to say we would. We will make more time on the life of the furnaces and we will make more heats per week.

President.—Well now, another reason, you mentioned it yourself to-day, why the outturn in this country should be lower than in other countries is the climatic reason. Do you regard that as the most important reason of all?

Mr. Tutwiler.—I think for five months out of the year it will be a permanent handicap.

President.—We have seen the figures attached to Mr. Alexander's note showing the outturn of cold weather months to be higher than the outturn of hot weather months.

Mr. Tutwiler.—The only really bad time we have is the latter part of April and May. It is the after effect that is bad. The men are not able to stand up to the furnace. As I say, that will be a permanent handicap. It takes us another month or six weeks to get straightened out after the hot weather is really over. In England I never saw a water cooled furnace and frame because you have a temperate climate. In America, where you have two extremes, they work on water cooled furnaces and frame for the protection of the men.

Mr. Ginwala.—Don't you have water cooled furnaces here?

Mr. Tutwiler.—We did not have them in the first instance. We are putting them in now and getting better results. Every year we are making a larger tonnage.

President.—Possibly I misunderstood Mr. Alexander's answer, but I understood from him that you had already water cooled fronts on all the furnaces?

Mr. Tutwiler.—We have, but I am not sure whether we have on one of them.

President.—You have on all except one?

Mr. Tutwiler.—Yes.

President.—When was it decided to put up these?

Mr. Tutwiler.—We tried to get them out here in 1916, but we could not get them from anybody. We were able to get them only in 1919.

President.—What I was thinking was that it might be of some importance to know when they were actually installed, because the effect might conceivably be traceable in the outturn.

Mr. Tutwiler.—Within the last 12 months, the whole shop has been equipped.

President.—During the last 12 months you had a certain advantage which you did not have in 1921-22.

Mr. Tutwiler.—Yes.

President.—Perhaps it is a little too early to determine to what extent the introduction of these water cooled fronts will minimise the climatic handicap.

Mr. Tutwiler.—It certainly helps to a great extent, as has been proved not only by ourselves but also by the Tinplate Company who work on water cooled floors. I know that our shop is much better since we had these water cooled fronts.

President.—There was another cause for the lower output which Mr. Alexander mentioned to us; that is to say, if you compare the output figures here with those in America, American figures would probably include second class rails and things of that kind which you don't include in your output.

Mr. Tutwiler.—They are all included in the States. In the early days here the practice was worked that way, but it was stopped after I became the Works Manager.

President.—I am afraid I have forgotten the date.

Mr. *Tutwiler.*—1914.

President.—The change was made about then?

Mr. Tutwiler.—Shortly after that.

President.—The figure which Mr. Alexander gave us was about 92 per cent. first class rails and 8 per cent. second class rails.

Mr. Tutwiler.—Railways in buying rails take about 5 per cent. second class rails in America.

President.—I am thinking of what it meant here.

Mr. Tutwiler.—5 to 7 per cent. rejections.

Mr. Mather.—Mr. Alexander told us that it was about 8 per cent.

Mr. Tutwiler.—It depends a good deal on the sections we roll.

President.—This is not really strictly relevant to the Open Hearth because it does not affect your outturn of ingots.

Mr. Tutwiler.—No.

President.—I understand that, at any rate, as compared with what you were doing during the war, one of the reasons for a lower outturn now is that you are much more particular about the quality owing to specifications having been tightened up, and generally your policy is also to ensure that you get the best quality of steel.

Mr. Tutwiler.—That is right.

President.—I take it, as time goes on, and your staff generally gets more and more thoroughly trained, you hope that the outturn will gradually improve.

Mr. Tutwiler.—I think that that is the case now. It is due to this. When immediately after the war we were only making two kinds of steel, we could either put it into the structural mill or the rail mill, but now we have the plate mill—we supply the Tinplate Company and also the Agricultural Implements Company. It gives a great many more outlets to steel which we would before put back into the furnace and melt. We are now able to turn out more in the form of finished products. Our practice is much better in the Open Hearth.

President.—So that you anticipate that the output of ingots will grow and consequently the cost per ton will go down.

Mr. Tutwiler.—Yes.

President.—Perhaps this is the most convenient point to go on with a few general questions about the Duplex process. Can you tell us the advantages which the management expects from the adoption of this process in preference to the ordinary Open Hearth process?

Mr. Tutwiler.—One advantage that we will have is that the Duplex furnace is a 200-ton furnace. Against that, we have only 50-ton furnaces on this side. The same number of imported or covenanted men will be employed on this furnace as on the one stationary Open Hearth furnace, but the Duplex furnace will be making as much steel as they are making on four furnaces of the old type.

President.—It is two men a shift whether it is a 200-ton furnace or a 50-ton furnace. So, the proportion of your covenanted labour will go down

Mr. Tutwiler.—That is right.

President.—Before we go on from that point, is 50 tons or 60 tons the maximum you can tap from a stationary Open Hearth furnace?

Mr. Tutwiler.—I have seen 90 tons tapped.

President.—You have just now told us that these two large Duplex furnaces are 200-tons. Supposing you had decided to adopt the stationary furnace for the Greater Extensions, what would have been the size of individual furnaces?

Mr. Tutwiler.—I should say 75-ton furnaces. But we would not have adopted these at all.

President.—I am trying to compare the two things and find what in your opinion are the advantages of the Duplex plant. You have given one of the advantages as compared with your present plant, but I take it that had the Company decided to put in stationary furnaces, they would put in larger stationary furnaces.

Mr. Tutwiler.—I should think that the 75-tons would be the most convenient as they have done in other countries.

President.—Therefore the inference is that the advantage of the Duplex process as compared with new Open Hearth furnaces is not quite so great as it is when you compare the Duplex you actually put up with the Open Hearth you actually had.

Mr. Tutwiler.—It would be about 75 to 200 instead of 50 to 200 on the existing plant. In other countries where this Duplex process is worked they tap from 90 to 100 tons every four hours. We are not going to do it in 4 hours but we expect to do it in six hours, that is two hours longer. So one of the Stationary furnaces will tap two heats in 24 hours of 57 tons per heat and we would be able to tap every six hours—4 heats of 100 tons.

President.—That means you expect to get your output more rapidly?

Mr. Tutwiler.—Yes.

President.—With this process you think there is a distinct speeding up?

Mr. Tutwiler.—No doubt about that. Then we think we have a big advantage in furnace.

President.—Will you explain this? I gather that you think that this advantage arises specially out of Indian conditions. The advantage is greater here than it would be in other countries. Could you explain to us what the difficulty is of working the stationary furnace that you have which you want to get over by using the Duplex?

Mr. Tutwiler.—It is on account of holes which form in the bottom and banks of the furnaces which must be required before the furnace can again be charged. In a stationary furnace the only means of removing steel which remains in these holes after a furnace has tapped is by using a long rabble and working the metal out by hand. This requires a dozen men standing only about six feet away from the furnace door and occupies varying times from 1 to 4 hours, sometimes longer. A hole occurring in a tilting furnace is drained in a few minutes by the simple process of tilting the furnace. It is close proximity to the furnace and using the rabbles on the stationary furnaces which make it so hard upon men out here in the hot weather.

President.—Do you get many of these holes in the furnace?

Mr. Tutwiler.—Yes, at present, but we expect to eliminate them, to a great extent by getting better bottom making materials in the process of calcining them. We are putting up a new calcining plant and this is one of the most important things we are doing to increase the tonnage.

President.—There is a point about covenanted labour. In addition to the covenanted labour actually required on the tilting furnace do you have covenanted labour for the converter or the mixer?

Mr. Tutwiler.—Not on the mixer.

President.—How many covenanted men do you require on the converter?

Mr. Tutwiler.—Two men on each.

President.—What it comes to is this, that you require the same covenanted labour as would work four 75-ton stationary furnaces: each converter will take two.

Mr. Tutwiler.—Two men on each furnace and two men on the converters per shift and this will make six covenanted men per shift.

President.—So the covenanted labour employed in connection with the Duplex is equal to what you would employ on your 75-ton stationary furnaces.

Mr. Tutwiler.—That is right but on the stationary plant we are making about 16,500 tons a month with a seven furnace plant and here we expect to make 30,000 tons.

President.—So that the cost per ton goes down a good deal.

Mr. Tutwiler.—Yes.

President.—How does the initial cost of the Duplex plant compare with the cost of the stationary furnace giving the same outturn?

Mr. Tutwiler.—I can give you the cost of the Duplex plant as a whole but I cannot give you a comparison.

President.—It was not originally worked out?

Mr. Tutwiler.—No.

President.—Of course that is a point which comes in in connection with the cheapness of the process. If the initial cost is higher there will be something to set off against the economies in working.

Mr. Tutwiler.—The tilting furnace I think has been accepted in England as better than the stationary furnace because even working with the process that we are using here, they use the tilting furnace in preference to the stationary furnace.

Mr. Ginwala.—Does not it come to this: that your seven furnaces are really equal to your one Duplex?

Mr. Tutwiler.—Not quite.

Mr. Ginwala.—But you told us that 16,500 was the production of the stationary furnaces.

Mr. Tutwiler.—What we expect to do when we get everything in is: we expect about 16,500 tons in the old plant and 30,000 tons in the two Duplex plant, that is, the output will be in the proportion of 17: 15.

President.—It would be useful to know the cost: it can be estimated of course. It is just to have an idea as to how the two things compare.

Mr. Tutwiler.—We will take one of the last furnaces we put up here and compare it with one of these Duplex furnaces.

Mr. Peterson.—A fair comparison would be a complete plant which would produce the same amount of annual output as compared with a Duplex plant.

Mr. Tutwiler.—The cost is about Rs. 11¼ lakhs with all accessories for a stationary plant but I do not know what is the total cost of the Duplex.

President.—There is one other point. When we were in Jamshedpur in August—I have not been able to trace the reference, either it was in one of the written statements put in by the Company or in the oral evidence- something was said on behalf of the Company as to the severe work of the furnaces during the war, and the impression left in my mind was that the Company suggested that this was still affecting the outturn of the furnaces and the results they were getting from them.

Mr. Tutwiler.—I would not like to say that.

President.—My impression may have been quite erroneous. What is important is to find out what your view is about that.

Mr. Tutwiler.—Our view is that the furnaces are quite all right now. They were abused during the war period.

President.—That has now been eliminated, I think?

Mr. Tutwiler.—I am quite sure of that.

President.—I just wanted to get that point cleared up.

Mr. Tutwiler.—In the case of machinery I would not say the same thing.

President.—There is another point connected with the Open Hearth which suggests the reason why the cost is higher in this country, that is, the question of the quality of your refractories, your silica bricks and all the various refractories that you use in connection with your furnace. How far do you think yourself that is the principal cause of the lower outturn?

Mr. Tutwiler. We get 75 to 100 heats less in our furnace.

President.—As compared with other countries?

Mr. Tutwiler.—I think in other countries they run about 200 heats on an average and we run about 125. That makes a considerable difference.

President.—When a furnace has to be rebuilt after 75 to 100 heats for how long is it out of action?

Mr. Tutwiler.—For about 10 days.

President.—In the case of silica bricks the quality of the bricks made in India is not quite equal to the quality of the bricks obtained from elsewhere?

Mr. Tutwiler.—The bricks we are making in India to-day are much better than the bricks we used to import at one time from Japan.

President.—I am thinking of the quality of the bricks that your competitors in England or America or Europe use.

Mr. Tutwiler.—The quality of the materials used in the brick is all right and the quality of the brick is improving year by year. It is a question of burning: the mix is all right now, but if you take the brick in America and ship it out here, I do not think you can get better result on it than we get from our brick, because the dampness and so forth in the hold of the vessels will have an effect on it.

President.—You mean the brick would deteriorate to a certain extent during transport?

Mr. Tutwiler.—Yes.

President.—But still at present you are at a disadvantage as compared with the manufacturer elsewhere in so far as the quality of the brick is concerned?

Mr. Tutwiler.—Yes.

President.—Do you think that will gradually be overcome?

Mr. Tutwiler.—I should say that it is improving gradually.

Mr. Mather.—In any event you would not put down that difference of 75 heats to the quality of the brick? Part of it has to be explained. I suppose you are in a position to estimate fairly well just how much of that difference of 75 heats is due to refractories.

Mr. Tutwiler.—We are getting more heats now out of the bricks made in this country than we did get out of bricks imported from America, Germany and England.

Mr. Mather.—It looks as if the difference in the quality of the brick itself is not very great.

Mr. Tutwiler.—I can say it is much better than any brick we have imported here because the latter is always affected by dampness and handling.

Mr. Mather.—Probably the greater part of the difference of 75 heats is due to other things than the quality of the brick.

Mr. Tutwiler.—Severe work on the furnace.

President.—I do not quite follow that.

Mr. Tutwiler.—Heavier slag and things of that sort. That takes more heat. We have got to carry that on account of the quality of the steel we are making and of the inferior materials.

President.—Does it mean that your heats last longer on the average?

Mr. Tutwiler.—Our heats are longer in the furnace than in Western countries. The longer it remains in the furnace the more severe is the work on it.

President.—Can you put a figure on the difference and compare the average time at all if you have any figures for comparison?

Mr. Tutwiler.—I have, but I cannot give them off hand.

President.—If you have any figures that would illustrate the point that you take a longer time on the average with your heats than in other countries, that would be helpful.

Mr. Tutwiler.—I will give you that.

Mr. Ginwala.—Perhaps you have seen the figures which Mr. Alexander gave us about the cost of production in the United States and in this country for 1922-23?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—You will see that he takes the cost of the mixture at Rs. 66 and the cost of the ingot at Rs. 90. So there is a difference of Rs. 24 there between the cost of the mixture and the ingot.

Mr. Tutwiler.—You must take cost of mixture per ton of ingots, *i.e.*, Rs. 73-8.

Mr. Ginwala.—All right. So there is a difference of Rs. 16-8-0 and in your case Rs. 39 is the cost of the mixture per ton of ingots, and Rs. 70-4 is the cost of the ingots.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—That is to say, there is a difference of Rs. 31, so that you are worse off by Rs. 15 as compared with the United States.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Do you suggest that you are worse off to the extent of Rs. 15 owing to climatic difference?

Mr. Tutwiler.—Not altogether, though climatic conditions had something to do with it.

Mr. Ginwala.—Mr. Alexander was inclined to the opinion that most of it was due to that.

Mr. Tutwiler.—To a certain extent, but in the first place our cost of bricks and things like that.

Mr. Ginwala.—I have got your works cost here for 1923. The first big item after the metallic mixture is fuel and producer gas. It comes to about Rs. 7-8-0.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Is that not a little higher than in the United States?

Mr. Tutwiler.—That will always be.

Mr. Ginwala.—Can you explain why?

Mr. Tutwiler.—On account of the quality of the coal.

Mr. Ginwala.—I am dealing with fuel in the Open Hearth. Do you use more producer gas than they do in other countries?

Mr. Tutwiler.—Yes. We have to get more heat in the furnaces and we have to use gas all the time.

Mr. Ginwala.—It has been suggested that in some plants they do not use much producer gas at all. They have the coke oven and the blast furnace gases which do all the work.

Mr. Tutwiler.—I have never heard of blast furnace gas used in the Open Hearth. In the early days here when we built the coke ovens we had no gas to spare. We do not use the coke oven gas now in the Open Hearth: we use it in the plate mill furnaces, soaking pits, etc. It is just a question of how much gas is available.

Mr. Ginwala.—It has been suggested that there is more coal used in order to produce your producer gas than in other countries.

Mr. Tutwiler.—A great many countries use tar: other countries use natural crude oils, petroleum. When we built this plant originally we did not have anything to use here except coal: we did not even have any waste gas from the coke ovens because they were not regenerative ovens.

Mr. Ginwala.—I think Mr. Alexander told us either in his written statement or in his oral evidence, I forget which, that as you had more and better practice you would be able to reduce the producer gas that you at present required.

Mr. Tutwiler.—Yes. By every minute we reduce the time of the heat in the Open Hearth furnace we reduce also the coal consumed.

Mr. Ginwala.—It comes to this: that you use more coal per ton of your production in this country than in other countries chiefly because the heats are longer.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—It seems to me that it is rather high because, if you take the total costs in the United States, they are only about Rs. 17.

Mr. Tutwiler.—I do not know whether the plant in the United States to which these figures relate was burning coal, coke oven gas or tar.

Mr. Ginwala.—The point is this: I gave you the difference in spread as Rs. 15. They cannot spend as much as Rs. 7-8-0 as you do on the fuel out of that?

Mr. Tutwiler.—One reason for this is that our producer coal has gone from Rs. 3-8 to Rs. 11-8 a ton.

Mr. Ginwala.—That may be some explanation. In the United States the cost of coal has come down.

Mr. Tutwiler.—Yes. In the southern parts of the United States the cost is less than it is here.

Mr. Ginwala.—The tendency here is for the price of coal to go up and the tendency there is for the price to go down. You have here, for instance, two very big items in your service and other expenses. First is the total labour cost which comes to Rs. 6-13-0. That is rather a high percentage when compared with the United States.

Mr. Tutwiler.—It is higher than the United States: but I do not think it is higher than in any other countries.

Mr. Ginwala.—The figure for labour in the United States is Rs. 4-8. That really leaves them altogether Rs. 12 for the whole thing?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—From which they paid for fuel and service and other charges?

Mr. Tutwiler.—Yes. But I think this comparison has been made with a plant which produces much larger tonnage than we do here.

Mr. Ginwala.—So the costs are not comparable?

Mr. Tutwiler.—No.

Mr. Ginwala.—But at any rate you are worse off to the extent of nearly Rs. 2 on the labour, your labour being Rs. 6-12-0?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—You have other big charges—furnace and mixer repairs Rs. 7-5-0. How much would that amount to in the United States according to your information?

Mr. Tutwiler.—I would not like to say that. I have not got any recent figures.

Mr. Ginwala.—It is a tremendously big sum.

Mr. Tutwiler.—Certainly. But the price of materials, refractories and so on in America are much less than in India. I know of one: Silica bricks could be bought for $18, they are about $38 now-a-days.

Mr. Ginwala.—Your suggestion is that this is due more to the cost of materials here and greater wear and tear due to climatic conditions?

Mr. Tutwiler.—I would not put in climatic conditions so much in the forefront.

Mr. Ginwala.—Not so much as to upset the calculations?

Mr. Tutwiler.—No.

Mr. Ginwala.—It is largely due to the materials being more expensive?

Mr. Tutwiler.—Yes. I will give you a comparison between American refractories and Indian. These are actually quotations that we obtained in the latter part of last year, delivered Tatanagar price.

The quotation we had from England for silica bricks is Rs. 416 per 1,000.

The quotation we had from Germany for silica bricks is Rs. 556 per 1,000.

The quotation we had from America for silica bricks is Rs. 492 per 1,000. That is all delivered Tatanagar.

Mr. Ginwala.—Have you got the f.o.b. price?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—That is really what we want.

Mr. Tutwiler.—Rs. 189 for silica bricks in England.
Rs. 216 for silica bricks in Germany.
Rs. 282 for silica bricks in America.
That is f.o.b. price.

Mr. Ginwala.—And yours at the makers' works here?

Mr. Tutwiler.—Rs. 200.

Mr. Ginwala.—That is not very much.

Mr. Mather.—Is that quite correct, Rs. 189 English price at makers' works and Rs. 416 delivered here?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—You don't have to import all these things now?

Mr. Tutwiler.—We did up till the end of the war. We only began to make silica bricks in 1919.

Mr. Ginwala.—The man who makes steel in those countries will be paying as much as you pay for these materials?

Mr. Tutwiler.—Yes, but he will get more life out of his furnace. The cost of production is so high because we do not get so many heats per furnace as they get in other countries. For magnesite bricks we used to pay Rs. 600 and in 1920 we were paying Rs. 2,300 for them.

President.—What are you paying now?

Mr. Tutwiler.—Rs. 1,100 and odd. During the war when we could not get any we sent our own raw magnesite to Kumardhubi and they made them from our material. The imported bricks then cost Rs. 2,300 per thousand.

Mr. Ginwala.—

Then, refractories	2·47
Tools	1·66

Between these they make about Rs. 4?

Mr. Tutwiler.—You mean refractories, tools and miscellaneous supplies?

Mr. Ginwala.—Yes. That must be a considerable amount in the United States?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Do you use all imported oil?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Are they from the Burmah Oil Company?

Mr. Tutwiler.—We use all imported oil, some from the Burmah Oil Co., and some from the Standard Oil Co. We have to pay more in this country for oil and lubricants, and we use more lubricants than in a cooler climate and that difficulty will always remain.

Mr. Ginwala.—Chrome ore and Fluor Spar?

Mr. Tutwiler.—Fluor Spar we have to import: that will always have to be imported. Dolomite and limestone will cost us more because we have an inferior quality but not to a great extent when we get the new calcining plant in operation. That will bring down the cost considerably.

Mr. Ginwala.—These explain the amount of difference between your cost and the United States cost?

Mr. Tutwiler.—Yes.

Mr. Kale.—Did I understand Mr. Alexander correctly to say that the productive capacity of the old type furnace is comparatively smaller? Would you not advise that these should be scrapped?

Mr. Tutwiler.—We have not enough stationary furnaces now to work up the excess scrap from the mills; during the war we improved the old furnaces and built new ones.

Mr. Kale.—Will it not be in the long run profitable to build new ones in place of the old type furnaces?

Mr. Tutwiler.—I should say yes.

Mr. Kale.—Not now?

Mr. Tutwiler.—No, some day.

Mr. Kale.—It has been suggested that as some of your machinery is old fashioned and is not producing as much as it ought to, it would be worth your while replacing it by a newer type. What is the difficulty that stands in the way of your doing so? Is the difficulty financial or is it some other difficulty?

Mr. Tutwiler.—The difficulty to-day I should say would be finance, but even if we had the finance to-day it would not be good policy to do it.

Mr. Kale.—You don't think it would be advisable?

Mr. Tutwiler.—Not to-day. After the whole plant has been in operation, extensions and everything, then we should put in the newer type of furnace for which we have got room on the other side of the tilting furnaces and we have arranged for putting in another 200-ton tilting furnace and the stationary furnaces would gradually become obsolete.

Mr. Kale.—So that in your opinion it would be an uneconomical proposition to replace the old type to-day as conditions stand?

Mr. Tutwiler.—There are many plants working to-day that are no more up to date than our old Open Hearth furnaces.

Mr. Mather.—Do you mind telling me whether during the last two years you have sold much scrap outside?

Mr. Tutwiler.—No.

Mr. Mather.—Have you bought any outside scrap except from the subsidiaries?

Mr. Tutwiler.—We bought from Messrs. Nursing & Co., Messrs. P. N. Dutt & Co., and people like that, about 2,000 tons in all. That is all we bought from outside.

Mr. Mather.—I take it you limit your purchase largely on account of the price, that you cannot get cheap enough scrap?

Mr. Tutwiler.—The kind of scrap that we buy outside is not really mill scrap.

Mr. Mather.—The point I have in my mind is this that in the future you would be using no steel scrap in your Duplex plant practically. You have not shown that in your statement?

Mr. Tutwiler.—We have not shown any for that.

Mr. Mather.—That plant is for the pig iron process and the scrap produced by rolling the steel made by the Duplex process will be sent to the old open-hearth department where you are going to use a bigger proportion of scrap than you are doing now?

Mr. Tutwiler.—Quite right.

Mr. Mather.—I presume you have calculated that this bigger percentage of scrap in your charge will make it possible to produce ingots at a cheaper price in the Open Hearth?

Mr. Tutwiler.—Yes.

Mr. Mather.—That is very largely on account of the shorter time required per heat?

Mr. Tutwiler.—Making more heats.

Mr. Mather.—If that is so, I quite agree that is a sound policy that you can reasonably expect to increase the number of heats in a given time. If you increase your percentage of scrap, would it not pay you to use all the scrap you possibly can in your Open Hearth, subject of course to being able to get scrap suitable in price? While you are limited by your own supplies, as you are at present, to about 70 per cent. pig and 30 per cent. scrap, scrap might be even more valuable than pig iron, and it might almost pay you to pay more for scrap because scrap helps you to increase your output.

Mr. Tutwiler.—Don't you think there is a limit to that?

Mr. Mather.—I quite agree that there is a limit, but we may perhaps take a fairly parallel case. As you know, in Belgium, Germany, France and Luxemburg, etc., the ordinary structural steel, bars and so on compete very keenly in the world's markets. These products are made chiefly by the Basic Bessemer process in which comparatively little scrap can be used. The consequence is that they produce much excess scrap which they cannot use, and for that reason they put in Open Hearth plants. I think it is fairly general in these countries to use as much as 70 to 75 per cent. of scrap and 30 to 25 per cent. of pig iron in their Open Hearth, and as a consequence they are able to get between 20 to 24 heats per week out of a good furnace. I have seen them doing it, and I think this is a fairly regular practice. It is very largely the economical combination of the straight pig iron process and the Open Hearth process using a very large proportion of scrap that enables them to put their steel on the market at such a comparatively low price.

Mr. Tutwiler.—Their scrap must be very cheap.

Mr. Mather.—It is chiefly their own scrap. They do find it very economical to use in the Open Hearth practically as large a quantity as they can get, and in view of that I want to know whether in view of the present circumstances you would think it worth your while to buy more scrap if you are able to get it. I am not saying that you can. If you cannot get it, that more or less settles the matter under the present conditions. But at any rate in the future, according to this flow sheet, you show that you are going to use 45 per cent. of scrap and 55 per cent. pig iron on the Open Hearth. I notice, at the same time, that you are doing that, you are proposing to put nearly 25 per cent. mill scrap into the blast furnace?

Mr. Tutwiler.—In making that flow sheet I did not know whether we would get the best result in the Open Hearth if we increased that scrap to 60 or 70 per cent. therefore we showed a 40 per cent. mixture. If we could get better results with 70 per cent. we would do it.

Mr. Mather.—I just wanted to satisfy myself that you had in mind the possible advantages of using a bigger percentage of scrap.

Mr. Tutwiler.—We have laid out the Duplex plant with that in view when finance is available.

Mr. Mather.—If you are able to develop your operations in much the same way as the tendency has been in other countries in the direction of using a very large percentage of scrap, you may at any rate bear that in mind and it would mean that you would be able to get a considerably bigger output that is shown here. In so far as this was possible it would mean that you would be able to produce more cheaply than your present statement shows.

Mr. Tutwiler.—I have sent in a statement to the Board giving the cost in 1921-22 because we expect to work up to that percentage of scrap.

Mr. Mather.—My point is that, if you could use still more scrap, it would still further reduce the cost.

Mr. Tutwiler.—Yes, but I want to be a bit conservative.

Mr. Mather.—In connection with the Duplex plant you are aware that there is always a difference of opinion about the advantages and disadvantages of any new process of making steel and the practice varies a good deal in different countries?

Mr. Tutwiler.—Yes.

Mr. Mather.—I don't think there is any plant in England, and I don't think any on the Continent, using this Duplex process, but there are a number in the United States. Can you tell us how many Duplex plants of this type have been put in recently in America?

Mr. Tutwiler.—I know of one plant at Chicago and another at Gary. These are the recent ones that I know of, but in Birmingham, Alabama, they have used that process for a longer period and they have 8 tilting furnaces with this Basic Process and three or four acid converters. They do about 90,000 tons of ingots for rails per month.

Mr. Mather.—In the whole plant?

Mr. Tutwiler.—Yes, and that is all rails.

Mr. Mather.—What is the phosphorus content of that pig iron?

Mr. Tutwiler.—It is over 1 per cent.

Mr. Mather.—It seems to me that you have one drawback—I hope it may prove to be a small one—by starting the Duplex process here. It means that you have to introduce into your steel manufacture in India a fresh type of skilled labour. You have got a number of men in your Open Hearth, local hands and Indians, who are becoming conversant with Open Hearth work. As you introduce a totally fresh process, for a time at any rate, you will have to depend completely for every part of the operation of the new plant on your imported labour.

Mr. Tutwiler.—I think in Birmingham, Alabama, they went in for this process for more or less the same reason that we are going to because next to us they have the hottest climate where steel is made and they have adopted this process. When they originally started they had Mr. Talbot there, but they had to give up his process and go back to the Basic Process.

Mr. Mather.—In the flow sheet you give us the percentage of ingots in the Open Hearth and the Duplex, as 85 per cent. in the Open Hearth and 83 in the Duplex. Do you mind telling me just on what basis these yields are calculated?

Mr. Tutwiler.—85 per cent. is about our actual practice.

Mr. Mather.—What is the percentage of usable ingots to the percentage of pig iron or scrap put in? If you got at the end of the year some excess scrap which you had to send back for instance, you would not count that?

Mr. Tutwiler.—They do count in the yield here. This is the actual yield.

Mr. Mather.—It is the percentage of ingots which could be rolled?

Mr. Tutwiler.—Yes.

President.—Would the adoption of the tilting furnace entirely overcome the tapping difficulties in connection with your present stationary furnaces? Do you regard them as serious in the case of stationary furnaces?

Mr. Tutwiler.—The bottom trouble causes more delays than anything else.

President.—Can you tell us what the difficulties are as regards tapping?

Mr. Tutwiler.—The primary cause of the difficulty is that when holes occur in the banks or furnace bottoms the tapping hole often has to be destroyed in order to facilitate the removal of the steel worked out from the hole. Several hours are required to make new tapping holes. The reason for holes forming in the furnace due to the use at present of poor refractories has been previously explained.

President.—Are the difficulties in connection with tapping much greater in this country than in any other country?

Mr. Tutwiler.—I don't think so, except that we have no good materials out here, but we will get away from them.

President.—Was it largely in view of the special conditions in India that you wanted to get away from stationary furnaces?

Mr. Tutwiler.—Every plant has its tapping difficulty and bottom troubles. They don't have as much as we, but we can partly get away from them by using better bottom making materials and working with the tilting type of furnaces. The plant that was built by the United States Steel Corporation in Alabama makes much cheaper steel than any other plant. They have adopted the same system that we are using here for more or less the same reasons of climatic conditions. They had to send for some materials from the north. They don't do so now. For a good many years, they had to import everything from the north to the south.

President.—What sort of materials do you refer to?

Mr. Tutwiler.—Silica bricks, magnesite, etc. All the labour had to be imported. They had to be imported under a similar contract system to what we have out here and of course the people have now learnt and it is not necessary now to import labour in the south. The first steel made was made by imported labour from England.

President.—The next general point is the question of fuel in the works. I think that it is stated somewhere in the evidence that approximately four tons of coal is required to make a ton of steel. Is that approximately right?

Mr. Tutwiler.—Yes.

President.—I gathered from the evidence that during the first few years after the war, or perhaps a little longer, owing to the deterioration in the quality of coal, the quantity of coal required to make a ton of steel was going up.

Mr. Tutwiler.—Yes.

President.—What was it before this deterioration began? Things have become worse in this respect since the war. Supposing it is now 4 tons, what was it before this deterioration began in the quality of coal?

Mr. Tutwiler.—I should not like to answer off-hand.

President.—Is there any reason to suppose that there has been a permanent deterioration in the quality of Indian coal?

Mr. Tutwiler.—No. One class of coal that is inferior is gas producer coal. In pre-war days there was not much demand for slack and rubble coal, and rubble coal is obtained from screening Run of mine coal. We were able to get our requirements in those days, but when the demand came for coal in India, we could not do that. We had to crush the big lumps of steam coal, that is why we could not get the same results.

President.—Is that a permanency?

Mr. Tutwiler.—No.

President.—Will that disappear again?

Mr. Tutwiler.—It will disappear. In one of our collieries from which we expect to get our full requirements of gas coal we are putting in a screening plant. That is as economical as any that has come in recent years.

President.—Have you more up-to-date producers on the other plant?

Mr. Tutwiler.—Yes.

President.—You put in a new gas producing plant, with the duplex furnace.

Mr. Tutwiler.—Yes. We get about 2 per cent. higher of CO on the new producer than we do from the old type of producers.

President.—Part of gas producing plant, that is, the old gas producers, will be less efficient than the new gas producers?

Mr. Tutwiler.—That is true.

President.—What I was thinking of for the moment was mainly this: if four tons is what you are using per ton of steel at present, and if during the war or a little earlier you were getting better results than that, there is no reason why you should not get back to those results eventually.

Mr. Tutwiler.—No. We hope to get much better results. We have gas from the bye-product coke ovens. For instance, for heating all the ingots for the new mills, we are using coke oven gas.

President.—Take the case of your coke oven gas. Some of the ovens you are still working as non-recovery ovens?

Mr. Tutwiler.—180.

President.—What proportion of your coke is made in the non-recovery ovens?

Mr. Tutwiler.—We make on an average 500 tons daily and on the others we make 1850 tons. We only have one battery of coke ovens not completed, but will be in about a month. That will put us in a better position than we are to-day. We make about 22 per cent. in non-recovery ones.

President.—What proportion of the total gas produced in coke ovens are you using for heating purposes and how much have you not yet succeeded in utilising?

Mr. Tutwiler.—We are going to utilise all we can spare. A certain percentage of the gas that is made in coke ovens—say roughly 50 per cent.—goes back to heat the ovens themselves, and only the other 50 per cent. is available. We intend using it in the soaking pits. We also intend using it in calcining plant. If we have any excess after that, we will use it in the tilting furnaces in conjunction with tar.

President.—Then you are satisfied that you will be able to utilise all the gas that you get from the coke ovens.

Mr. Tutwiler.—Yes.

President.—Then in the case of blast furnaces, to what extent is the waste gas utilised?

Mr. Tutwiler.—We utilise all that.

President.—How is it utilised?

Mr. Tutwiler.—In heating stoves. Each furnace has four stoves.

President.—That is part of the regular blast furnace process?

Mr. Tutwiler.—Yes. That is for heating the blast. We heat it with the waste gas. We heat the stove from the waste gas, that is on an average 35 per cent. of the total gas made, and the rest of it we put under boilers for raising steam.

President.—To what extent does that supply your requirements of fuel for boilers?

Mr. Tutwiler.—35 per cent. is used for stoves, 60 per cent. goes into boilers and 5 per cent. is wasted.

President.—Are you satisfied that only 5 per cent. is wasted at present?

Mr. Tutwiler.—That is as near as we can get. There is no way of absolutely telling that, but I do want to say that some of our older boilers are certainly not connected up with gas burners to give efficient results. They are being changed as fast as we can.

President.—Then you are not yet getting the full value from the blast furnace gas which you ought to get from it?

Mr. Tutwiler.—I quite agree. I say that no plant gets full efficiency from blast furnace gas.

President.—That may be. What one wants to ascertain is to what extent it is possible for you, by improvements in the plant, to get better results?

Mr. Tutwiler.—My answer is that we don't intend to have coal fired boilers except one boiler plant and it is our intention to fire all the other boiler plants with the gases from the blast furnaces.

President.—When do you expect to get that result? In order to get that result, will a new plant have to be installed? Will there be expenditure on this account?

Mr. Tutwiler.—It is under construction now. It will be ready in 40 to 50 days.

President.—What difference will that make to your consumption of coal?

Mr. Tutwiler.—I should say that we won't burn any more coal in the Greater Extensions than at present for steam purposes. I think that one point that is to be remembered in this connection is that we are not only pulling our own plant from these boilers and powerhouses, but also the subsidiaries and the town. We have always a margin of safety and so we have to burn more coal.

President.—In arriving at your figure of 4 tons of coal per ton of steel you make allowance for the coal that is used for purposes other than the production of steel.

Mr. Tutwiler.—Quite.

President.—When we were in Jamshedpur in August, you told us that at that time there was some improvement taking place again in the quality of coal. that was coming to you from the coal fields.

Mr. Tutwiler.—That continues to improve.

President.—What has been the result since?

Mr. Tutwiler.—For the last six weeks the coke is about the same quality as it was three years ago, which contains about 20 per cent. ash. When you were here I told you 25 per cent., that is about what we consider as good coke from the Indian coal.

President.—You have been getting corresponding results in blast furnaces, as the result of better coke?

Mr. Tutwiler.—Yes.

President.—I want to know whether the consumption has gone down.

Mr. Tutwiler.—We are better by 400 lbs. now in the case of two furnaces.

President.—That makes a pretty considerable difference.

Mr. Tutwiler.—But it keeps pace with the rise in the price of coke.

President.—Does the quality of fluxes you have to use in India make any difference to the quantity of coal you require?

Mr. Tutwiler.—The poorer the flux, the more you have to use per ton of iron.

President.—Your dolomite and limestone are inferior to those used in other countries. Does that practically mean that you have got to use more coke to get your results?

Mr. Tutwiler.—Yes.

President.—I am trying to get at the various reasons why your coal consumption is high. Then there is also the fact that Mr. Ginwala mentioned that the quality of Indian coal is distinctly inferior to the coal in other steel producing countries.

Mr. Tutwiler.—That is coking coal.

President.—In the case of coking coal, it definitely means a higher consumption of coke in blast furnaces. You cannot get away from it. It must remain as a permanent disadvantage, I suppose.

Mr. Tutwiler.—Yes, until such time as they may find some method of washing this coal without greater waste. So far it has not been done.

President.—Supposing you can by a certain treatment produce coke of equal quality to that in other countries, still you have to pay something to wash that. It is still there.

Mr. Tutwiler.—It is a permanent disadvantage.

President.—In the case of gas coal and steam coal, do you consider that the disadvantage in respect of the quality of Indian coal is as great as it is in the case of the Indian coke? The most important thing is coking coal, is it not?

Mr. Tutwiler.—Yes.

President.—The other main cause that has been affecting and is likely to affect your cost of production is labour. As regards this question of labour, of course, it is obvious that your covenanted labour must cost you more. Taking your covenanted labour here and the people who do the same work in other countries—they are not actually covenanted labour but it is convenient to call them so—admittedly your covenanted labour must cost you more per mill or per furnace than it does to the manufacturers in other countries. But for the rest of the labour that has to be employed in this country does the labour other than covenanted labour, cost you more than the corresponding labour in other countries or does it cost you less?

Mr. Tutwiler.—The only way we can judge is the cost per ton.

President.—The cost per ton brings in other things that we have been discussing to-day, *viz.*, that your output per furnace is lower than it would be in other countries and that of course affects your labour cost per ton.

Mr. Tutwiler.—Yes.

President.—What I am trying to ascertain is how far your cost of labour per ton is due merely to the fact that you are getting a lower output, and how far it is due to the fact that you are spending more per furnace crew so to speak.

Mr. Tutwiler.—We have a good many more men.

President.—Certainly you have a larger number of men. The Board would at once agree that there is no question of working your furnaces with the same number of men as in western countries. What I am thinking of is not the numbers at the moment, but your total wages bill per furnace or per mill in the rolling departments. How would it compare with the total wages bill in other countries?

Mr. Tutwiler.—I would not like to answer that point.

President.—I am prepared to recognise that it may be a very difficult question to get an answer to.

Mr. Tutwiler.—I know that at home there are usually three men actually on the furnace, but then there are other things. I do not know how to compare.

President.—That is a point which, if it could be investigated, would be of some importance to the Board. If you could take the total wages' bill of your Open Hearth Department and get corresponding figures for a similar battery of furnaces in another country and compare the two, it might be found that your total wages' bill per furnace was no higher than it was in the other country, but that owing to the lower output you had to show a much higher labour cost.

Mr. Tutwiler.—They are all paid on tonnage. They are not paid as our labour. They are paid nothing except per ton of output. Two shops in the same district may be paying different rates on account of different charges, in the way of handling materials, and things of that sort.

President.—Even so, you can get an average figure of what wages they were actually drawing in their normal production. However, if the figures are not available, it is hardly passible to compare. Has any systematic enquiry been made recently at Jamshedpur in order to ascertain whether the number of labourers employed could be reduced?

Mr. Tutwiler.—Yes.

President.—Was it found possible as a result of the enquiry to cut down the number of labourers in any department?

Mr. Tutwiler.—Not to any appreciable extent.

President.—The general impression left in my mind is that there is room for economy in that direction. It is possible that the number of labourers employed could go down. I admit that it is no more than a general impression.

Mr. Tutwiler.—If you went up there, you would be under the impression but we cannot depend on regular attendance and so forth as they do in other countries. Some days we have a surplus and some days we have not enough. I do not know how we could run with any less.

President.—You mean that labour is very irregular in attendance.

Mr. Tutwiler.—Yes, you have that all over India.

Mr. Peterson.—There will be about 20 per cent. absentees.

President.—That is your normal figure?

Mr. Tutwiler.—Yes.

President.—Does that vary on different days? Is it higher on the pay day or Monday or what?

Mr. Tutwiler.—Just those times of the year when they want to go back to their villages.

President.—As in the coalfields?

Mr. Tutwiler.—We are not affected as much as in the coalfields because we have so much of the higher type of labour.

President.—If they go back to their villages and if they are absent for 20 days or so, you strike them off, don't you, and they no longer appear as absentees.

Mr. Tutwiler.—We don't do that. Coolies are only paid by tickets. If they come back, we take them because work has accumulated during their absence.

President.—Because cooly labour in India is comparatively speaking so cheap, there must be a constant temptation to any man in charge of a department, or a branch of a department, not to be too careful about the total number employed.

Mr. Tutwiler.—That is quite true. In the Open Hearth Department and blast furnaces, there is very little of that class of labour. All the coolies in the mills are handling rails and doing ordinary labourer's work, but in the Open Hearth Department, except in the calcining and indirect labour, very little actual cooly labour is employed on the furnaces.

Mr. Peterson.—We must have more men on the works who are being trained. If we are to train Indians that is the only way they can be trained. That leads to a certain amount of increase.

President.—When we were last here Mr. Tutwiler told us that the reason for the large number of people employed in certain departments was due to the fact that the Greater Extensions would come into operation soon, and therefore you had to train a larger number of people.

Mr. Tutwiler.—That ground has already begun to disappear.

Mr. Peterson.—We are always training men and that cannot be done unless the men actually work in the plant.

Mr. Ginwala.—What is the percentage of that surplus?

Mr. Peterson.—It is difficult to say.

President.—I think you gave us the figure of 16,000 as the men actually employed on the operations. Out of this 16,000 what proportion would be ordinary coolies doing the simplest kind of manual labour. Is it possible to give a rough figure of that?

Mr. Tutwiler.—About six to seven thousand.

President.—How do the wages of that class of labour compare with the pre-war rate of wages?

Mr. Tutwiler.—Pre-war rate was 5 annas and now it is annas 7 pies 3 and if they work for 28 days in a month they get two days' bonus.

President.—It is just about a 50 per cent. increase in the case of ordinary cooly wages. Then in the case of artisan labour which is higher than cooly labour, is the percentage of increase about the same or a little less as you get to higher rates of pay?

Mr. Tutwiler.—It works out to about 40 per cent.

Mr. Peterson.—You should also take into consideration the privileges they enjoy such as leave etc.: the actual increase is only 40 per cent.

President.—The impression in my mind was that it worked out to 50 per cent. for all people on low rates of pay, but as you got higher up the percentage decreased.

Mr. Peterson.—People on Rs. 50 and below got 50 per cent. and those getting above that got about 40 per cent.

President.—We had some evidence about the production of blast furnaces —I think it was told us in Bombay—that the blast furnaces were not giving the results they ought to. Can you give us in a general way the facts about that? Take the case of your older blast furnaces what production were they designed for?

Mr. Tutwiler.—175 tons.

President.—Were any alterations made to them subsequently?

Mr. Tutwiler.—Not material: they were made two feet larger.

President.—What outturn are they giving you per day just now?

Mr. Tutwiler.—The outturn of one of the older furnaces on basic iron averaged last month 317 tons and the other old furnace working on higher silicon iron averaged 270 tons. The Batelle furnace which was only brought out as a second-hand furnace is giving 240 tons a day. It was only giving 17 tons but now we are able to get about 240 tons and we hope to get bett results from her. She was brought out here during the war. We made al the cast iron pipes for the blast pipes. She should make just as much as the other two furnaces in a very short time.

President.—The new furnace that has been in operation for some months now its capacity is 450 tons?

Mr. Tutwiler.—Her designed capacity was 500 tons. She is actually making now 485 tons and she will make 500. We have been handicapped all along in not having enough coke.

President.—Was that due to the fact that your new batteries of coke ovens were not complete?

Mr. Tutwiler.—There are so many other things like the E. I. R. strike that handicapped us very severely.

President.—You expect at any rate to get 500 tons and you are close on it now?

सत्यमेव जयते

Mr. Tutwiler.—She has made much more than 500 tons. We can make over 500 tons without any trouble but we do not know whether it would be economical to do so, as it means the using of more coke per ton.

President.—You think that if your production goes up beyond a certain figure your cost of production per ton goes up?

Mr. Tutwiler.—The more wind you blow the higher your coke consumption.

President.—Do you consider that your rolling mills are more expensive to operate than a plant constructed according to present day designs?

Mr. Tutwiler.—Much more.

President.—You expect considerable economy in that part of production in the Greater Extensions?

Mr. Tutwiler.—Yes. There is one thing to be said for the old mills. We can put them on certain class of materials and make them much more economically but we are handicapped to-day because we are rolling so many different sections on one mill.

President.—Also you have told us at the beginning of the examination that, if the open hearth were producing more ingots, the rolling mills are quite capable of dealing with it.

Mr. Tutwiler.—Yes. They are working in three shifts.

President.—So that if a larger tonnage were passing through the mills, your cost of production per ton at these stages would go down at once. For practical purposes I take it you would not require to put up your labour staff.

Mr. Tutwiler.—No.

President.—So that there is room for economy of production there if you have got a larger quantity of steel to roll?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Your total consumption of coal works out nearly to 4¼ tons per ton of steel in 1921-22?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—While in the United States taking the tonnage it would be about 2½ tons.

Mr. Tutwiler.—That depends on so many conditions I would not like to say. Some plants are using much more coal than others.

Mr. Ginwala.—A fair amount of coal used in the United States or Great Britain generally speaking would work out to about 3½ tons?

Mr. Tutwiler.—That would be liberal I should say, but I would not like to give an exact figure.

Mr. Ginwala.—That would depend on the quality of the coal generally speaking.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—I have been trying to work out these costs but there is not very much decrease compared to the year 1916-17 in the total quantity of coal used in proportion to production.

Mr. Tutwiler.—That I think is due more to the quality of the coal.

Mr. Ginwala.—The consumption would be less but it appears to be a little more than before.

Mr. Tutwiler.—I think that is due to the quality.

Mr. Ginwala.—Is it still bad when compared to 1916-17?

Mr. Tutwiler.—Coking coal has improved considerably but I do not think the figures that you have got there shew that.

Mr. Ginwala.—In 1916-17 it was roughly about 4 tons: the average for 1921-22 is about 4¼ tons.

Mr. Tutwiler.– It would not be altogether coal: tight specification I should say had something to do with ½ ton.

Mr. Ginwala.—That may explain it probably.

President.—Do you arrive at 4½ tons taking the total consumption of coal at Jamshedpur or the total amount contributing to steel only?

Mr. Ginwala.—I have converted the surplus pig into steel and I get the total of steel.

Mr. Tutwiler.—We are pumping much more water than we did in those years and so on and that consumes more coal. We have got also these subsidiary industries here.

Mr. Ginwala.—That goes into your credit account.

Mr. Tutwiler.—That cannot be shown against your tons of coal.

Mr. Ginwala.—That explains something of it. With regard to the Greater Extensions I would like to ask one or two questions. You have stated here that your total production when your Greater Extensions are in full operation would be 421,000 tons of finished steel. Does it mean the total capacity of your rolling mill or the total production?

Mr. Tutwiler.—You mean what the blooming mills are capable of? The new blooming mill would be capable of rolling 650,000 tons. The new rail mill would be capable of rolling 400,000 tons.

Mr. Mather.—Is that blooms?

Mr. Tutwiler.—Rails, etc.

	Tons.
24″ and 18″ mills	500,000
New merchant mills	120,000
Sheet mills	36,000 sheets.
Plate mill	144,000

These are the capacities of the new plant.

Mr. Ginwala.—The old plant may be taken at ⅓ of that roughly?

Mr. Tutwiler.—144,000 tons for the old rail mill and 55,000 for the old bar mills.

Mr. Ginwala.—You have left a sufficient amount of margin for the additional amount of steel that you may be able to manufacture.

Mr. Tutwiler.—Yes. We allowed for that in the construction of the Duplex plant.

Mr. Ginwala.—That is to say, your Greater Extensions are so planned that your production might be increased if finances permit without the rolling mill plant requiring any extension.

Mr. Mather.—The additional expenditure would be less when you want to increase your production?

Mr. Peterson.—By spending another Rs. 15 or 16 lakhs we could immediately increase our production still further by about 15,000 tons a month.

Mr. Ginwala.—May I take it that it would have been uneconomical to have had a smaller plant and it was necessary to keep this reserve for future extensions?

Mr. Tutwiler.—I should say "yes."

Mr. Ginwala.—With regard to the cost of the Greater Extensions, you started spending on it in 1917. At that time I take it the prices were very much high as compared to now?

Mr. Tutwiler.—I had nothing to do with the construction of the Greater Extensions up till 1921.

Mr. Peterson.—Up to 1921 the Consulting Engineers were responsible for the construction.

Mr. Ginwala.—Mr. Peterson, in estimating the cost of the Greater Extensions would the cost of steel generally be any criterion?—An increase or decrease in the cost of steel in the United States?

Mr. Peterson.—It depends on when the orders were placed.

Mr. Ginwala.—Supposing the price of rails is to-day $43. When you paid for the materials the rails were selling at $55. I was estimating the cost. Would it be sound to apply a principle like that?

Mr. Peterson.—It would depend on when the orders were placed.

Mr. Tutwiler.—I do not think the order for steel was placed till 1919.

Mr. Mather.—I think what Mr. Ginwala is driving at is this: does the price of steel in machinery and plant vary in the same proportion roughly as the price of steel rails from time to time?

President.—In particular, has it varied in much the same proportion during the last 5 or 6 years?

Mr. Tutwiler.—I know that it varies from month to month. During this period it has been going up every month until it reached a high point in 1920. Just what class of machinery went up I cannot say.

Mr. Ginwala.—Take the price of rails. It was $28 in 1916. In 1919 it was $55 and now it is $43. Supposing you bought your plant in 1919 I wanted to find out its present value. For 1919 I take the figure of 55 and for 1923 I take the figure of 43. Would it be right to take the proportion of 55 to 43 in estimating the cost of the steel plant?

Mr. Tutwiler.—I think building materials and things like that should depreciate in that proportion. The cost of building materials is actually less to-day but machinery and so forth is worth as much to-day as it was then. If we paid Rs. 150 for steel to-day and then to-morrow or next day we could buy it for Rs. 120 certainly there would be a large difference.

Mr. Ginwala.—Would it be fair to take this proportion for the plant taken as a whole?

Mr. Tutwiler.—Not on rails but on structural materials, beams, channels. You should not take rails because it has a fixed price.

Mr. Mather.—Would you regard electrical machinery and so on as varying in the same proportion as structural steel?

Mr. Tutwiler.—We could buy it cheaper to-day than in 1920.

President.—Is the percentage of fall in the price about the same or is it smaller or larger?

Mr. Peterson.—It is impossible to take any general principle in the case of a very varying plant.

Mr. Ginwala.—I am merely taking the percentages and I am not complicating them by any reference to exchange.

Mr. Peterson.—But we paid in rupees and we must take the exchange in.

Mr. Ginwala.—My point was this. If in the United States this plant was built it would have depreciated by so much. Therefore it would have depreciated similarly if built in this country.

Mr. Peterson.—It would depreciate according to the schedule Government have put on it. If it were put in three years later it would, of course, be less. Certain classes of machinery that we bought then you could not buy cheaper to-day but the majority could be bought cheaper.

Mr. Ginwala.—We should make allowances for all that. We shall take a figure which would meet practical purposes. It is not a question of writing down the value of the plant to the exact value of to-day but to find out how much less it would cost if it were built to-day.

Mr. Tutwiler.—A couple of crores less for the whole thing.

Mr. Ginwala.—If a man were coming into the field now to start the steel industry he would probably do it at Rs. 2 crores less for the whole block?

Mr. Tutwiler.—The whole block including collieries and everything.

President.—I think the evidence given by Messrs. Bird & Co. for a plant to produce nearly the same quantity of steel as you have is that they would require Rs. 15 crores to construct their steel works to turn out 450,000 tons and that includes the town expenditure, ore mines, collieries, etc. The figure of 20 crores includes 3 crores for subsidiaries and 2 crores for working capital. The fixed capital expenditure they put at 15 crores. However, it must be, to a large extent, a matter of opinion.

Mr. Peterson.—These orders were not all placed in 1920. We could give you the dates when the orders were placed.

Mr. Ginwala.—Did you send out your orders from time to time?

Mr. Peterson.—Yes. I will give you the date of each order and the amount if you want it. We started placing the orders about 1917.

President.—Were the prices high even then?

Mr. Peterson.—Yes, but they were not nearly as high as they were afterwards. One of the reasons why we could not get deliveries quickly was that the prices were going higher, and the manufacturers were getting higher prices from other people. That was one of our troubles.

Mr. Ginwala.—The point is this that most of the important orders were in 1920, 1921 and 1922.

Mr. Peterson.—I do not think so. I don't think that the most expensive orders were placed in those years; they must have been placed considerably before that time.

Mr. Ginwala. In 1920 the prices were very high. For the goods that arrived in 1920 orders must have been placed in 1919?

Mr. Peterson.—Not necessarily.

Mr. Tutwiler.—Some orders were placed in the latter part of 1916.

Mr. Peterson.—I think most of the orders had been placed by 1919 except simpler things. I can make a summary of the different dates at which they were placed and show the amount affected by the high price.

Mr. Ginwala.—You would not be affected very much by the high price?

Mr. Peterson.—Not very much.

Mr. Ginwala.—The important point alleged against you is that you ought not to have placed orders for your plant for the Greater Extension at a time when any other business man would not have bought that because the prices were very high.

Mr. Peterson.—We bought our plant for a price which we expected would remain, but it went higher. I will give you a column in this statement showing the different dates.

Mr. Tutwiler.—Very few of the orders could have been placed later than 1919 because they could not have arrived by this time.

Mr. Peterson.—I should think a great majority of these orders were placed before 1919.

Mr. Ginwala.—Were there any orders which were actually placed at the rates actually prevalent in 1920?

Mr. Peterson.—Not for any of the big plant, except the structural steel. Orders in excess of Rs. 5,000 go to the Board, and so far as I recollect in the last four years I have seen no orders for any of the big items of this plant.

Mr. Ginwala.—You purchased your plant or at least some of it when the prices were at their highest?

Mr. Peterson.—Certainly not. All the orders were placed before that time. There is one exception. The Plate Mill was bought at a very high price because of the urgency with which it was required by Government.

Mr. Kale.—You must have been affected by the high exchange in 1920?

Mr. Peterson.—We were.

Mr. Kale.—I point that out because the Steel Company were one of the largest buyers of reverse Councils.

Mr. Peterson.—We did benefit by the high exchange. We were using them to pay for the machinery.

Mr. Ginwala.—Did you generally cover your exchange at the time?

Mr. Peterson.—Our total average was Rs. 322 per 100 dollars.

Mr. Ginwala.—What was the par value and the present value?

Mr. Peterson.—It was about 330 when I left Bombay. I don't know what it is now- par is Rs. 312.

Mr. Ginwala.—Mr. Tutwiler, you gave us certain figures from memory about the raising cost of coal. I think they were not quite correct. You gave the raising cost at Rs. 6 a ton at the collieries.

President.—Later on on page 52 of the evidence you say " Our cost to-day works out, not including depreciation, interest, etc., to an average of about Rs. 6 a ton, that is at the collieries? "

Mr. Ginwala.—It is very much less according to my figures.

Mr. Tutwiler.—Do you mean the cost of coal at the pithead?

Mr. Ginwala.—Yes. You have certainly given a higher cost. I work out the average cost in 1921-22 at about Rs. 5-5 a ton and 1922-23, Rs. 4-12.

Mr. Tutwiler.—I can give you the actual figures. I don't know how I gave you the others.

President.—My recollection is that you had your papers before you when you gave the evidence.

Mr. Tutwiler.—I think it is mixed up by the cost of coal to make a ton of coke: is that what you are referring to?

Mr. Ginwala.—If you take the raising cost at Rs. 6 a ton and add depreciation, etc., the cost of the coal becomes appreciably higher.

Mr. Tutwiler.—I don't know: we might have been discussing the cost of coal into the coke ovens.

President.—The figures are averages for bought coal and purchased coal but the definite statement was about the cost of raising your own coal: " Our cost to-day works out, not including depreciation, interest, etc., to an average of about Rs. 6 a ton, that is at the collieries." We want to find out what that figure actually means.

Mr. Tutwiler.—I think that was the rate for July: I will look that up. But the average for the year would come down.

Mr. Ginwala.—The rates are Rs. 5-5 for 1921-22, Rs. 4-13 for 1922-23. Will you please work them out for us and send them on to us. When you get your evidence you can correct that if it is not accurate.

President.—Is Rs. 6 the average price for all coal or is it only for the coking coal. It needs an explanation.

Mr. Tutwiler.—That is the average of our own collieries for July.

President.—That is all right then.

Mr. Ginwala.—But the average cost it comes to, according to my calculation, is Rs. 4-13 for 1922-23 and Rs. 5-5 for 1921-22.

Mr. Tutwiler.—I should think that is about right. I will check that and let you know.

Mr. Ginwala.—May we take the figures of output of each colliery that you have given us as correct?

Mr. Peterson.—These statements have been prepared by Messrs. Kilburn & Co., our Managing Agents. If you want to ask questions about them I shall bring Captain Foster from Calcutta to give evidence. The figures are correct.

Mr. Ginwala.—There is nothing very intricate in it. The point is simply this: in your annual statement you give a figure which is very much smaller for the output of your collieries than the figures I have given. All I wanted to know was whether we are to accept these figures as correct.

Mr. Peterson.—I should think so. They came from Messrs. Kilburn & Co., the Managing Agents.

Mr. Ginwala.—You say, for instance, the output for 1922-23 is 514,485 tons and in that year's annual statement it was 349,899 tons. That is the annual report to the shareholders.

President.—Similarly in 1921-22—416,000 whereas in the annual statement it was shown at 218,000 tons. Whether the figure you give in the annual report is your own coal, which you consume at Jamshedpur, we do not know.

Mr. Peterson.—That will be raw material used in the works. That does not include any coal sold.

Mr. Ginwala.—What I wish to know is how much of your own raisings you use in your works?

Mr. Peterson.—That is the figure given in the annual report to the shareholders.

Mr. Ginwala.—Take the total quantity used in 1921-22—755,532 tons?

Mr. Peterson.—Yes.

Mr. Ginwala.—You purchased 507,000 tons and you raised 416,000 tons, but you sold a good deal more than that?

Mr. Peterson.—There might have been stocks.

Mr. Ginwala.—How much of your own raisings did you actually use?

Mr. Peterson.—That is the figure stated in the annual report which you have quoted.

Mr. Ginwala.—You take all the seams from all the collieries and you sell some and use some. It is not given in any of these figures how much you use and how much you sell.

Mr. Peterson.—This was prepared exactly in the way in which the Board asked us to do it.

Mr. Ginwala.—At that time it did not strike me that you keep only a portion of what you raise and sell the rest.

Mr. Peterson.—We can tell you exactly what we used of our own raisings and what we sold.

Mr. Ginwala.—How much of what you use would you purchase from outside collieries?

Mr. Peterson.—We can give you that information from Jamadoba at once.

Mr. Ginwala.—Can you find out exactly what proportion of the coal raised you actually used on your works and how much of it you disposed of?

Mr. Peterson.—Some of it is used by the collieries themselves. A certain amount of coal has to be used for power.

President.—That comes into the raising cost.

Mr. Ginwala.—In charging your works with the coal you always omit the depreciation on the collieries?

Mr. Tutwiler.—The colliery cost sheets only show the actual raising cost. The royalty is included in the cost of raising.

Mr. Ginwala.—Is that the correct method of doing it?

Mr. Tutwiler.—That is the general practice followed in the coalfields.

Mr. Ginwala.—You see in the case of the coal you purchase it includes everything but in the case of the coal that you raise it does not include depreciation and other charges.

Mr. Peterson.—Your point is that all the cost should be charged to the works?

Mr. Ginwala.—Yes. I mean charged to the coke ovens. You use two different kinds of coal: do you charge for the coal at different prices?

Mr. Peterson.—That is the same principle on which pig is charged in the Open Hearth at actual works cost. The same principle is followed throughout the costs.

Mr. Ginwala.—I quite understand that, but I am asking you whether that is the usual practice. Have you any experience of any other steel works? What do they do?

Mr. Peterson.—They charge the actual raising cost.

Mr. Ginwala.—And the colliery is taken as a part of the plant?

Mr. Peterson.—Yes. They do the same as we do here in the blast furnace.

Mr. Ginwala.—The profit that you make on coal—for instance, you sell a considerable amount of coal—that goes back into the annual profit and loss account?

Mr. Peterson.—Yes. That increases the profit.

President.—I quite understand why you show that in your accounts in that particular way, but sooner or later in order to ascertain whether the bought coal you used or your own coal is the cheaper you have got to make allowance for the overhead charges?

Mr. Peterson.—We keep a separate account for the collieries in which we show the raising and every month we strike a balance to show whether the collieries are losing. We work it out every month but not for cost account purposes.

Mr. Ginwala.—What I want to know is whether it pays you to work your own collieries or not. Up to 1921-22 it certainly did not pay, I mean taking the results generally.

Mr. Peterson.—It depends entirely on whether you are taking any interest on the capital.

Mr. Ginwala.—Yes, at 7½ per cent.

Mr. Peterson.—On that basis it would not pay. Up to the present we have spent a large amount on developing the collieries but we expect to get it back in the next two or three years.

Mr. Tutwiler.—We have not begun to reap the benefit. We are not getting any extra production yet.

Mr. Peterson.—If you do not take 7½ per cent. on the original capital invested it does pay.

Mr. Ginwala.—Will you please work out these figures for 1921-22 and 1922-23? Take your depreciation.

Mr. Peterson.—I had better show you the statement we have.

Mr. Ginwala.—Now about rails. Mr. Alexander gave us the cost of blooms in the United States at Rs. 105, conversion Rs. 18 and the total cost Rs. 123 and your blooms Rs. 88-3, conversion Rs. 34-15 and the total cost Rs. 123. There is a difference of about Rs. 17 between your cost of conversion and that of the United States?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—What is the reason?

Mr. Tutwiler.—I should say of our different products.

Mr. Ginwala.—Is it one of the rules of Government specifications that you cannot have more than 85 per cent. rails out of ingots?

Mr. Tutwiler.—We have to scrap 15 per cent. according to the specification.

Mr. Ginwala.—Your average works out to about 80 per cent.?

Mr. Tutwiler.—It is about 74 to 75 per cent. from ingot to rail.

Mr. Ginwala.—But from blooms to rails it is 84 per cent.?

Mr. Tutwiler.—That is right.

Mr. Ginwala.—That is not so in the United States, may I take it?

Mr. Tutwiler.—They include all second class rails. If we include them our practice would be higher.

Mr. Mather.—74 per cent. is only first class rails?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—In your system of costs, you don't include second class rails as your output.

Mr. Tutwiler.—We don't consider second class rails as good products.

Mr. Ginwala.—That is why this figure comes so high?

Mr. Tutwiler.—Yes, that is one reason.

Mr. Ginwala.—Is there any other reason?

Mr. Tutwiler.—Do you mean in the yield?

Mr. Ginwala.—No, in the cost. The total spread is nearly Rs. 35.

Mr. Tutwiler.—One reason, as we say, is yield. Another reason is we have not got enough steel to keep this mill going fully. Another reason is that we lose much more time than they would lose in the United States because we roll many varied sections. If we were to roll rails and nothing else, we would have no roll-change in the middle of a week. Now we have to change three or four times in a week.

Mr. Ginwala.—That amounts to this to my mind. If there were more steel works in the country, your cost would go down.

Mr. Tutwiler.—In the States, they roll on their mills nothing but 60 to 110 lbs. rails.

Mr. Ginwala.—It is more or less due to the fact that you have to supply various kinds of steel.

Mr. Tutwiler.—Yes.

Mr. Ginwala.—If you had more steel works in the country, it would be so arranged that you would have only few particular kinds.

Mr. Tutwiler.—We will be able to specialise with our extensions coming in. The mills on this side will not roll anything but structural materials. The rail mills on the other side will only roll rails.

Mr. Ginwala.—The same argument applies to bars?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—A smaller output of each kind means more scrap, does it not?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—Don't you think that you are using a good deal more steam in your rail mill?

Mr. Tutwiler.—In the cost per ton; that is pretty high.

Mr. Ginwala.—What is that due to?

Mr. Tutwiler.—It is due to the type of engine we have. I should not say, if you take coal at the same price in another country and take the same kind of equipments we have, it would be any higher.

Mr. Ginwala.—In the new mills, it won't be higher.

Mr. Tutwiler.—It should be much less, as it is all electrically driven.

President.—Although it is quite true that you divide your grand total cost of producing rails by the number of first class rails only to get your cost per ton, yet before you have arrived at your dividend, you have already taken credit for second class rails in this particular year. On an average the price works out to Rs. 77 a ton. It is not that you have neglected your second class rails altogether. There is an allowance made for the production of second class rails.

Mr. Tutwiler.—We take them as scrap or pig iron price if we break them up.

President.—The figures given here are 5,900 tons.

Mr. Tutwiler.—That is what we have actually sold. What we don't sell we either take it at scrap or pig iron price. We don't consider second class rails when we make them until we have actually sold them.

President.—They are treated as scrap until you actually sell them?

Mr. Tutwiler.—Yes.

President.—It is quite true when you are dividing to get your cost per ton, you don't include second class rails, but on the other hand in the total amount divided there is some allowance made for them in your cost account.

Mr. Tutwiler.—There is an allowance for those that we have actually sold.

President.—It might be something like 6,000 tons in a year.

Mr. Tutwiler.—Yes, but we don't include them in the yield.

President.—But they come into the cost at a lower rate.

Mr. Tutwiler.—That comes in as scrap or second class rails.

President.—Your first class rails cost Rs. 125 a ton.

Mr. Tutwiler.—Yes.

President.—You are taking second class rails at about two-thirds of that.

Mr. Tutwiler.—Yes, that is we give credit in the cost for that. I do not know what percentage would be charged per month.

President.—Your total output for the whole year is 80,691 tons from the mills.

Mr. Tutwiler.—That is first class saleable material.

President.—If you add 6,000 tons of second class rails and divide by 86,691, you would get a very considerable difference in your figure. On the other hand, if they have already been taken into account at something like Rs. 80 a ton, you would not get a very big difference.

Mr. Tutwiler.—That is correct.

Mr. Ginwala.—How do you arrange your rolling programme?

Mr. Tutwiler.—According to the orders on our books.

Mr. Ginwala.—That is to say, instructions come from Bombay or what?

Mr. Tutwiler.—That is arranged here. State Railways and Company managed Railways send us their requirements of rails three months ahead, say in January for the next financial year and then we draw up our rolling programme so as to give them 25 per cent. of their requirements in each quarter, and in addition to that we take the tonnage of structural materials that we will be able to sell and draw up a programme—so many weeks on rails and so many weeks on structural materials.

Mr. Ginwala.—As regards your bar mill: what do you do? Is it on anticipations or is it on orders?

Mr. Tutwiler.—A great majority of times on actual orders, and at other times on anticipation of what the market can take.

Mr. Ginwala.—On an average how long do you take to execute an order in bar?

Mr. Tutwiler.—We try to keep about 60 days ahead. Sometimes we can execute an order within 10 or 15 days.

Mr. Ginwal —With regard to your pig, do you execute any separate orders for different kinds of pig, or would you generally go by your own requirements? It was stated to us that sometimes they could not get some kinds of pig iron from Tatas.

Mr. Tutwiler.—I have never heard of that. Bessemer Hematite pig is not made here.

Mr. Mather.—Occasionally people want your No. 1 pig. You may have none in stock. There may be occasions of that kind.

Mr. Tutwiler.—Such a state of affairs did exist during the war period, but I do not know of any enquiry that has come in within the last 10 months which we have failed to supply.

Mr. Mather.—So far as pig iron is concerned, you may have no stock of the particular grade asked for by a customer.

Mr. Tutwiler.—We keep stocks of bar materials and also structural materials. We put in a set of rolls and try to execute all the orders on our books. We also roll in anticipation of further orders.

Mr. Ginwala.—With regard to sales, you are not interested in sales, are you?

Mr. Peterson.—Most of the sales are done by Mr. Tutwiler in Calcutta.

Mr. Ginwala.—I see that there are columns in works sheets about depreciation and other charges but they are not entered in your costs.

Mr. Tutwiler.—That is done in Bombay.

Mr. Ginwala.—What I want to know is supposing you have got an order for bars, what would you add to your works cost?

Mr. Tutwiler.—I get from Bombay every month what they are going to add to the works costs.

Mr. Ginwala.—And then you add what Bombay asks you to add?

Mr. Tutwiler.—I simply add on what they send me.

Mr. Peterson.—It is worked out for a year. The same figure is added each month on the basis of the previous year.

Mr. Ginwala.—To the actual works expenses?

Mr. Peterson.—Yes, overhead charges are added. If you mean to say that we base our sale price on our cost, we don't.

Mr. Ginwala.—You have to go according to the market rate.

Mr. Peterson.—Our price is the c.i.f. landed price of British materials in Calcutta, *plus* duty and handling charges.

Mr. Ginwala.—So that at present it is quite immaterial whether you add these or not.

Mr. Peterson.—The point only arises in this way. We may want to shut down a particular department on the ground that it is not making money. We do this for our own purpose. It cannot affect the price. We can only get the price that the market will pay us, quite irrespective of what it costs us to make the material.

Mr. Ginwala.—Supposing you have got protection, would not you make any alteration in your practice? In that case, a good deal will depend on your cost of production. Would not you complete your works cost figures?

Mr. Peterson.—They are already complete. They are sent to the General Manager. We would not change our system of works costs.

Mr. Ginwala.—There are those printed columns. They must be used some time.

Mr. Peterson.—They are not filled up in the works.

Mr. Tutwiler.—If Bombay wished us to fill them up, we would do so.

Mr. Ginwala.—Have not you got a separate Sales Department here?

Mr. Tutwiler.—We have got a sales organisation. Mr. Chew is looking after it in conjunction with me and Mr. Sutanker.

Mr. Peterson.—It is more a question of delivery.

Mr. Ginwala.—I thought that the price was more important.

Mr. Peterson.—Price must always be based on the world price.

Mr. Ginwala.—Most of your sales are, I take it, on the Calcutta side.

Mr. Tutwiler.—Yes. I should say upcountry too.

Mr. Ginwala.—They go from here without reference to Bombay?

Mr. Tutwiler.—Bombay gets copies of everything we do. I do everything in consulation with Bombay.

Mr. Peterson.—In Bombay we would consult him and here he would consult us.

Mr. Ginwala.—Supposing you sell Messrs. Burn & Co. 1,000 tons, do you make a contract for the whole year?

Mr. Tutwiler.—Yes.

Mr. Ginwala.—And the price is fixed in sterling or is it fixed in rupees?

Mr. Tutwiler.—It is fixed in rupees on the average exchange. We would fix it every quarter on the average exchange and on the average landed price of British materials.

Mr. Ginwala.—Any fluctuation of exchange would affect you even in India when the transaction is purely a local one.

Mr. Tutwiler.—Because we have to sell in competition with Great Britain. All our prices are based on the British price of steel *plus* duty, freight and landing charges.

Mr. Ginwala.—That is because there is no market price?

Mr. Tutwiler.—That is the market price.

Mr. Ginwala.—I mean the local market price.

Mr. Tutwiler.—That would almost always be the British price. 100 tons of steel in Calcutta in the bazar would upset the price.

Mr. Ginwala.—Do you mean the c.i.f. price?

Mr. Tutwiler.—No, the bazar price.

Mr. Ginwala.—I take it that you have nothing to do with the bazar price. You always go on the c.i.f. price.

Mr. Tutwiler.—Yes. Bazar price changes from day to day according to the supplies in the bazar.

Mr. Mather.—How do you ascertain c.i.f. British prices?

Mr. Peterson.—We ascertain from our representatives in London by cable.

Mr. Kale.—You told us that workmen in the Open Hearth in America are paid on the basis of their outturn.

Mr. Tutwiler.—They get so much per ton.

Mr. Kale.—Do you follow that practice here?

Mr. Tutwiler.—No.

Mr. Kale.—Why not?

Mr. Tutwiler.—Because we cannot.

Mr. Kale.—What is the difficulty?

Mr. Tutwiler.—In the first place, no one would come out here without a guarantee.

Mr. Kale.—They would not think it worth their while unless they were guaranteed a certain amount per month?

Mr. Titwiler.—Yes.

Mr. Kale.—Is that the reason why the bonus system has been practically abandoned?

Mr. Tutwiler.—In pre-war days we paid only a fixed salary and no bonus. When the cost of labour went up in western countries naturally our men became all dissatisfied because they could make much more money in their own country than out here. Instead of raising the salary rate, we put them on a bonus rate—salary *plus* bonus.

Mr. Kale.- To-day it practically means that bonus is part of the salary?

Mr. Tutwiler.—Yes. Bonus is based on the output.

Mr. Kale.—Last August you told us that when the Greater Extensions were completed, you expected that at least a reduction of 10 per cent. in the cost of production would take place.

Mr. Tutwiler.—I was asked whether it would be that much. I said " at least that much." I remember it very clearly myself.

Mr. Kale.—And later on you gave us a statement showing on what items there would be a reduction.

Mr. Tutwiler.—That was Rs. 10 and not 10 per cent. in the Open Hearth practice.

Mr. Mather.—I have been considering the first of the three conditions laid down by the Fiscal Commission: just to what extent you have an advantage in the natural supplies of raw materials. Of course, you are perfectly aware that the actual composition of coal and ore is a very important factor in saying how they are advantageous to you. Can you supply us with a complete analysis of your ore, coke, coal, dolomite and limestone?

Mr. Tutwiler.—Yes.

Mr. Mather.—That would enable us to form a reasoned opinion. You might give us two statements—one relating to the early period and the other relating to the present conditions. Just now you have told us that your coal has improved so much recently and that it has gone down to 20 per cent. ash. You also expect that it will remain there. Analysis of coal will also help us.

Mr. Tutwiler.—I will send you that.

Mr. Mather.—Have you had the ash in the coal or coke analysed?

Mr. Tutwiler.—I have a complete analysis of the ash.

Mr. Mather.—I would like to have that included.

Mr. Tutwiler.—Yes.

Mr. Mather.—You have already given us a very interesting flow sheet showing the movement of your metals. Have you ever prepared any similar flow sheets for fuel consumption? Looking at this flow sheet, you know what happens to your metal until it becomes a finished product.

Mr. Tutwiler.—I have not actually prepared it in that form.

Mr. Mather.—I am not thinking so much where that coal comes from as what happens to it in the works itself.

Mr. Tutwiler.—I can give it to you quite easily.

Mr. Mather.—I should like to know approximately how much of coke oven gas goes into each department. You might also tell us what you do with your blast furnace gas, tar or any other bye-product that you might be actually using so that we can more or less study your fuel economy and fuel consumption as it is at present. I should like to know also what it would be a couple of years hence when you will have the Greater Extensions in full operation. Then we could see how far you expect to improve in your practice in fuel consumption.

Mr. Tutwiler.—I can give you everything (except coke oven gas) that will be accurate. I have not been using it long enough to know how much spare gas I have.

Mr. Mather.—In that case you could tell us the departments in which it is being used and how far it meets your requirements.

Mr. Tutwiler.—Yes.

Mr. Mather.—We have been given a figure of 16,000 as the total number of men employed by the Company. Is that a daily attendance? or is it an average number on the books?

Mr. Tutwiler.—That is daily attendance—that is in operation only.

Mr. Mather.—Can you tell us what you expect your employment of labour on the same basis will be when the Greater Extensions are in full operation? Have you prepared any careful estimate?

Mr. Tutwiler.—The only estimate that I ever made was about 2 years ago and we calculated then that it would be something like 24 to 25 thousand men when the Greater Extensions would be in full operation.

Mr. Mather.—So far as you know, there has been no change in the conditions since you prepared that statement?

Mr. Tutwiler.—No.

Mr. Mather.—There will be 24,000 men as against 16,000 men now and you will be getting roughly 3 times as much steel.

Mr. Tutwiler.—Yes.

Mr. Mather.—You have given us quite a lot of information already about the capacity of the various parts of this new plant but I just want to ask about the sleeper plant. You have entered against the flow sheet 2,820 tons. The plant itself, I suppose, has a greater capacity. *

Mr. Tutwiler.—Yes, it has been worked out in England.

Mr. Mather.—Is that the limit of the capacity? You only expect to make this and you have limited yourself to the steel supply. The import figures show that the railways have been using a very large tonnage of sleepers—about 75,000 tons of sleepers in 1922-23. It seems to me that there is a very big market for it.

Mr. Tutwiler.—We took the market at that time and that was about what it was. We took what we learnt from experience the consumption of different kinds of steel was. Of course, if that varies we shall alter the production.

Mr. Mather.—The trade returns show that the consumption last year was very large, and the information given to us in Bombay by the railways indicated that there was likely to be increased consumption, as railways which had not used steel sleepers previously would use them now.

President.—Supposing the price of steel sleepers were raised substantially they might go back to wooden sleepers. I am speaking from the point of view of the railways.

Mr. Tutwiler.—Most railways are for using steel sleepers now.

Mr. Mather.—It is a question of market. You show us that the coke required for your blast furnace is in excess of the estimated output of your coke ovens by about 87,000 tons and you add a note showing that this could be made up by operating the ovens 20·25 hours instead of 24 hours. This was drawn up I think about 18 months ago: since then you have experience of operating your Wilputte ovens and in operating your blast furnace. Can you tell us how you expect that difference to be bridged?

Mr. Tutwiler.—We are making about 2 hours in the coking time.

Mr. Mather.—So that you have been able to make some reduction in the coking time and the indications are that your average coke consumption will also be a little less than shown here?

Mr. Tutwiler.—Not only on this furnace but also on other furnaces. Gas coal is improving.

Mr. Mather.—I notice that in this you show no output for your two 10″ mills.

Mr. Tutwiler.—We are trying to use one of these as a hoop mill.

Mr. Mather.—This is a provisional idea you have in mind and you have not included it in this.

Mr. Tutwiler.—Yes.

---

* The full capacity of the plant is 15,000 tons a year.

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., recorded at Jamshedpur on the 19th December 1923.

President.—Perhaps it will be useful to start with the reply that has been put in on behalf of the Company in reply to Mr. Homi's statement. If you will look first on page 2 you say "The conditions in India for the production of steel in hundreds of thousands of tons are not at present suitable; contrary to the statement often made, there is nothing favourable beyond iron ore. The coal is inferior to what is obtainable in the principal steel centres."

Mr. Peterson.—That means inferior in quality.

President.—Has it been alleged that the Indian coal is as good as American coal?

Mr. Peterson.—What is meant is that the actual quality of the coal is not as good.

President.—After all, the advantage or disadvantge, as regards production of pig iron and steel so far as raw materials are concerned, is a question of price.

Mr. Peterson.—That is not the question which Mr. Homi has raised. He has raised the question of the technical efficiency of our practice and there the question of the inferiority of the raw material distinctly enters.

President.—That is rather a matter that should be brought out.

Mr. Peterson.—This sentence may give you a misleading impression. It gives the reason why the actual technical practice in India should be inferior to the practice in other countries.

President.—What you are thinking of is contrary to what Mr. Homi has said in his statement that you have got to use more coal and coke to get your production of pig iron. If that is meant that is all right. But it may leave the impression that in the price of coke per ton of pig iron you are at a disadvantage.

Mr. Peterson.—No. We are not.

President.—In the most recent number of the Iron and Coal Trades Review, the cost per ton of coke for pig in America, China (Hongkong) is given at 10 dollars 76 cents in China and 10 dollars 50 cents in America. I forget what figure you took for your coke.

Mr. Peterson.—Very much less than that—Rs. 15.

President.—That is 5 dollars. Of course the same would apply to bricks and important raw materials—that is refractories chiefly. You say "Bricks and important raw materials for open hearth furnaces are several times as costly as the silica bricks to American steel works." That is on the question of cost whereas in the previous statement......

Mr. Peterson.—It is a question of cost. They cost more in this country than in America.

President.—Is it not mainly a difference in the cost per ton of product?

Mr. Peterson.—The cost there would be larger, of course, owing to the lower production of steel.

President.—Mr. Tutwiler said that the difference in the actual cost per 1,000 bricks was not so very great now.

Mr. Mather.—It rather gives the impression that the cost per 1,000 bricks is several times as great as in America.

Mr. Peterson.—I think the cost of refractories would be very much greater per ton of steel.

President.—Then you say "the cost of labour per ton of steel product must be higher owing to the conditions of work." What are the conditions that you have in mind at present?

Mr. Peterson.—One of the conditions is the necessity of importing labour. We must obviously pay a higher price. Then there is the necessity of training labour—that means that you must have certain surplus labour; and another is the well-known irregular attendance of Indian labour. Another is the lower production per furnace which increases the cost of labour per ton.

President.—I take it that the Company have not gone back from their original statement that to a certain extent, if not entirely, these difficultes are temporary and will eventually disappear?

Mr. Peterson.—We confidently expect to get away from them.

President.—It may be taken in the sense that Indian labour is so inefficient that they could not do it at all.

Mr. Peterson.—We should ultimately be able to get as good technical efficiency as is obtained in any of the plants in America, but it will take some time.

President.—Then you say "that its practice is limited to small furnaces owing to its very limited market." I cannot follow that. Take your present plant. You have got seven steel furnaces at present. Is there any reason why you should not have three or four larger furnaces giving the same production as the seven smaller ones? I do not see how this matter can be affected by the size of the market.

Mr. Peterson.—I think probably that has reference to the circumstances in which the Steel Company started work. It had a very limited market. The comparison there would be that between this plant as originally established and, say, any plant in America turning out 1½ million tons which would have a ready market.

President.—Even at the beginning you could have started with two 80 ton furnaces rather than with four 40 ton furnaces. I do not see how the market affects the size of the furnace.

Mr. Peterson.—I think what is meant there is small production really.

President.—The size of the market won't affect the size of your furnaces so long as you require more than two or three furnaces?

Mr. Peterson.—I do not think it will.

President.—I take it that the new tilting furnaces would not be considered small?

Mr. Peterson.—No. They would be large. This has reference to the old plant.

President.—Even in the old plant a 75 ton furnace would be regarded as a normal type of stationary plant.

Mr. Peterson.—That is the ordinary normal size.

President.—That point then practically goes. In the very next para., on page 3, you say "if the product per worker in a furnace was the same as in Europe or America, still the labour cost per ton must necessarily be higher, unless the Indian practice was better." That does not seem to me to follow.

Mr. Peterson.—What is meant is that as you have to pay the Europeans you employed 60 per cent. more than in Western Countries, your labour cost per ton, other conditions being equal, must necessarily be higher here than in other countries.

President.—Not necessarily. The cost per ton for other labour per furnace might be a good deal lower.

Mr. Peterson.—The argument is that exactly the same number of men would be employed as we employ Europeans and their wage would necessarily be lower. In addition to this we have to employ other labour.

President.—In the first place, you have got the European hands at the top who cost you more than the corresponding hands in Europe and America. In the second place, it is clear that you have to employ a large number of other labourers on the open hearth furnaces than you would have to employ in America or Europe. But it is not obvious that the total cost of these other workers may not be lower, or even considerably lower, than the cost of the corresponding workmen in Europe or America. Your view may be right but it is not obvious.

Mr. Peterson.—We can only say that we do not think it would be.

President.—There is an important point there. It is not a theory to acquiesce in too readily. So long as you cannot get the same outturn per furnace as in Western Countries, your labour cost per ton must be high. That I admit, but in order to examine the case completely it would be necessary to determine how your labour cost per furnace worked out. I do not suggest that we want any further information about that matter, but it is a point which ought to be realised.

At the foot of page you say "The product per workman engaged on ingots would be ridiculously smaller because the total number would include coolies paid at the rate of 7 As. to 10 As. a day in order to get cheaply done that grade of labour which is too low for people paid on an average a Rs. 1,000 a month." The people who are paid Rs. 1,000 a month are, I take it, your covenanted hands?

Mr. Peterson.—Yes.

President.—Do the corresponding people in Europe or America do much manual work?

Mr. Peterson.—They would do all the manual work. They would not have any other class of coolies at all.

President.—You have got two men per furnace per shift?

Mr. Mather.—They certainly have more Europeans in England and in America than you have here.

President.—What would be the average crew for an open hearth furnace?

Mr. Mather.—The actual number required will depend so much on the plant including the type of the gas producer. With your type of gas producer there would be about 20.

Mr. Peterson.—Is it not true that in Europe and America a great deal of work that is done at present by actual cooly labour in our works would be done by various mechanical devices, because labour is expensive there and is not so here?

Mr. Mather.—But your statements show that it is expensive.

Mr. Peterson.—It was not expensive when the plant was put down originally. It has become expensive now.

Mr. Mather—There are many plants in England and on the Continent which are not more completely equipped with labour saving devices than your plant, and some of them are sending steel into India.

Mr. Peterson.—There would be nobody on those plants whom you would regard as an ordinary cooly.

Mr. Mather.—In every department of the steel works, even in modern steel works, there have to be a number of general labourers who are practically doing the same kind of work. Admittedly there is a very much smaller number.

Mr. Peterson.—Yes.

President.—After all, the principal people on the furnace would not be doing the bulk of the manual work. In the place of half a dozen men doing manual work, in Western Countries, you may have 40 or 50 in India. But the form in which you have stated the case is not very happy.

The next point is at page 14. You say "The same difference would be found in the production of collieries per man and those figures are public property." Can you let me have the figures?

Mr. Peterson.—I have given actual figures for the work of a coal cutter later on at page 26. These figures have been published.

President.—I wondered if you were referring to any official report by some colliery inspector?

Mr. Peterson.—I do not remember such a report.

President.—The point in the next passage apparently is that in as much as the outturn of the Indian brick-layer is so extraordinarily small when compared to the outturn in other countries, therefore the same kind of inefficiency is to be expected in other branches of work.

Mr. Peterson.—That is right. It is a general example.

President.—On page 15 you say "The efficiency of the furnaces necessarily ran down just as the railways ran down through overwork in war and in the boom." Has the efficiency begun to improve since then?

Mr. Peterson.—Yes. That is dealt with in the report of Dr. McWilliams.

President.—What I was looking at was the statement which gave the output of steel per man :

159 in 1920.
151 in 1920-21.
153 in 1921-22.

Then comes the strike ear which you cannot take for comparison.

Mr. Peterson.—Another factor comes in and that is the tightening of the specification as well as the actual condition of the furnace.

President.—I do not want to raise the question of the condition of the furnace. Our attention was drawn by witnesses in Calcutta, by Burn & Co. for instance, to the fact that after the war it was much more difficult to get work out of labour.

Mr. Peterson.—That has reference to the actual condition of the furnace.

President.—I do not proceed with this because we have asked that question of Mr. Tutwiler and we have got that point cleared up. Then on page 16 you say " The quality of the raw material is a myth except for iron ore ", but I do not know whether Mr. Homi got so far as to say that the quality of the coal was inferior. Possibly, it is implied in his statements.

Mr. Peterson.—It is implied in many of his statements : for instance, in para. 4 of his representation, he says " handicapped by certain natural or economic disadvantages, as for example lack of suitable raw materials." I think he has dealt with the question of the raw materials generally.

President.—I think he dealt with the fuel in such a way that suggested it, but he never went to the length of pointing it out. Then you say " The cheapness of Indian labour is a myth except in lower parts of metallurgy and in excavations, and yet in presence of it, the Steel Company has produced first rate steel......" What do you mean by lower parts of metallurgy?

Mr. Peterson.—I take it that means more or less the routine processes of the steel works. The word " metallurgy " is used rather loosely.

President.—How does your labour cost per ton of pig iron work out when compared with other countries?

Mr. Peterson.—Rs. 2/11 as compared with Rs. 3 in the United States and Rs. 2/9 in Canada. These are the figures in Mr. Alexander's statement showing the comparison of costs for 1923.

President.—In the case of pig iron it does not seem that Indian labour is as cheap and you hope it will eventually be efficient and cheaper?

Mr. Peterson.—Yes.

President.—Just below on the same page you say " If we had not made the Railway contracts we should have been entirely left . . ." ; I can understand that it is very important for a steel manufacturing company to have large orders for standard sections on which they can work continuously. But your statement goes rather far. Even if you had not got these contracts, it would still be open to you to tender annually for the rails required by the Government and the Companies.

Mr. Peterson.—Possibly, on the other hand, we might not have got the order at all even if we had tendered.

Mr. Mather.—Was there any reason to expect that? Was there anything in the attitude of the Railway Board to suggest that?

Mr. Peterson.—I know of a case myself from personal experience where I have offered material to a Railway but the offer has not been accepted although the material could only be bought at a higher price elsewhere.

Mr. Mather.—That might have been an exceptional case.

Mr. Peterson.—Yes, but you must realize that these negotiations were started in 1917.

President.—I am coming to that. I just wish to draw your attention to that.

Mr. Peterson.—At present we have offered rails to the two important Railways that are not taking rails from us, and we have been given the answer that we should be given the opportunity of tendering. Whether that tender will be in sterling or in rupees, or whether we shall be asked to tender f. o. b. England we do not know. We have endeavoured to tender in London repeatedly and we have always found that the conditions made it extremely difficult for us to obtain the tenders. As a matter of fact although we have tendered in about half a dozen to twelve cases not a single tender has been accepted.

Mr. Mather.—Have they all been rails?

Mr. Peterson.—No, miscellaneous materials.

President.—If you have difficulties of that kind I quite understand.

On page 19 in paragraph 10 you write "If the writer knew anything of the conditions of the market in India he would know that the country cannot absorb that quantity of structural steel". What quantity? I am not sure that any quantity is mentioned there. Neither you nor Mr. Homi mentioned the quantity. Do you mean the total production of your rail materials?

Mr. Peterson.—I don't think the country could have taken more than we manufactured. In that year it was about 10,000 tons.

Mr. Ginwala.—10,000 tons of structural material?

Mr. Peterson.—Yes. It came down tremendously. It was a period of high prices when the consumer would not buy at all.

President.—The point is not of very much importance. I only wanted to get an idea.

Mr. Peterson.—The country would certainly not have absorbed the 100,000 tons if we had not taken these Railway contracts and they had been thrown on the market. If we had confined ourselves to rolling structural materials, the country could not have taken steel in that shape.

President.—On page 20 you say "The Railways themselves have long-term contracts for coal".

Mr. Peterson.—I am referring to the contracts which they have now. They are 5-year contracts.

President.—Three years is the most that we have heard of.

Mr. Peterson.—I thought they were five-year contracts. The first two years were controlled prices and they simply continued them.

President.—Do they follow the Railway Board price?

Mr. Peterson.—Yes. They were all arranged at the same time and I thought it was for five years.

President.—They were fixed prices?

Mr. Peterson.—Yes. The prices were fixed for one year and increased by 8 annas next year and then 8 annas next year and so on.

President.—That is not a fixed price. I don't think it likely that the Railways will adhere to this practice of contracts for more than a year.

Mr. Peterson.—If the Railways are to ensure effectual running they must resort to long term contracts.

President.—Forward contracts for long period at fixed prices in the present world condition means serious danger.

Mr. Peterson.—Yes. At fixed prices, but not necessarily at prices with some relation to the world price. The point with regard to these contracts is this—that we had to obtain the certainty of continued working, and in order to do so we had really to agree to the conditions the other side wished to impose. We could not compel them to accept a particular price or a particular method of fixing it. That was the real point and, taking one risk against the other, we thought it was a lesser risk to take than take the chance of not getting rid of our production which might have happened. It was a question of putting one risk against another. We think we were right.

President.—Before the war even then there were pretty big fluctuations: even then you could be pretty sure......

Mr. Peterson.—How long was the rail price fixed? It must have been fixed for many years.

Mr. Mather.—It did actually stay stable for a number of years but it was not fixed from the beginning for that period. It was fixed by the Railmakers' Association but was subject to revision at any time. About 10 years before the war, the standard price of rails in England was £4/12/6. In 1914 just before the war it was £6/2/6.

Mr. Peterson.—I was only comparing the extraordinary fluctuations in price that occurred in 1918, 1919 and 1920. There has been nothing to compare with that in the history of the steel trade.

With regard to these rail contracts, the point really is this. I don't think it was a question of prices. Where the mistake was—was the question of cost. At the time these prices were fixed we saw no reason to suppose that we could not manufacture these rails at a works cost with overhead charges that would give us a profit of Rs. 5 per ton. The increase in cost that has followed has been entirely due to causes outside our control: nobody expected that. Nobody had any particular reason to expect that. It is not so much a question of misjudging the price of steel as misjudging the price of materials that go to make the steel.

President.—You mean misjudging the price at which you could afford to sell the steel?

Mr. Peterson.—Yes.

President.—That is the main thing. The fact that a much higher price could have been obtained in those years was subsidiary.

Then, on page 21 you say "The Indian Stores Department in London, contrary to the rules laid down by the Government of India, have recently told our London Office that in considering price they would not take duty into consideration".

Mr. Peterson.—That is in connection with the tenders we have been making. We received the information about three weeks ago.

President.—Have you drawn the attention of the Government of India to it? Because if you have done so already it will not be necessary for us to draw their attention to it.

Mr. Peterson.—We have drawn the attention of the Government of India to the case.

Mr. Mather.—Perhaps, if it is under consideration, the Board might draw attention to it and it would be useful to know the particulars.

Mr. Peterson.—We will give you a copy of the letter if you want one.

President.—At the bottom of the same page you say "That seems to be at the back of the writer's mind in his criticism. But it is impossible for any steel maker to get any price other than the world price with such additions as his geographical position may give him". May I suggest that the Tata Iron and Steel Company seem to have achieved the impossible in the case of the rail contracts?

Mr. Peterson.—You mean we have got a lower price?

President.—It is certainly not the world price even now.

Mr. Peterson.—As a matter of fact we often get a slightly better price than the English manufacturer?

Mr. Mather.—You did the impossible then?

President.—Would not that be due to temporary shortages of imported material?

Mr. Peterson.—It is due to the fact that ordinary buyers cannot obtain steel from America or England or from the Continent on credit. He must pay. He cannot pay and so he is quite willing to buy at a slightly higher price for the credit we give them.

President.—That is in the ordinary course of trade. That would not affect your average?

Mr. Peterson.—It does not amount to very much.

President.—On page 23 you say "The negotiations for the coal contracts were made before the collieries were bought". Can you tell us when the negotiations for the coal contracts were made?

Mr. Peterson.—They started somewhere in 1916.

President.—When were they concluded so that there was no going back on them?

Mr. Peterson.—I think in 1918. A good many of these contracts were made by Mr. Perin when he was in charge in 1918. I think 1918-19 would be the right date.—The idea at that time was to hold reserves of our own coke and coal as a sort of reserve so long as we could buy as much as we could cheaply from the market. This question of the steady increase in the price of coal has only become a factor in the three years.

President.—I am not questioning the wisdom of the Company's policy about the coal. The only point is that you can hardly hold your coal in reserve very much. Unless you can increase your production and sell it or use it, your cost is going to be very heavy.

Mr. Peterson.—The idea was to hold the coking coal in reserve. We are now developing the collieries as far as we can to give us the highest output. But that was the idea with which these long-term contracts were originally made. That was before the Company possessed the very large coal reserve it now has.

President.—Still in view of the limited quantity of coking coal in India it is an important point.

Mr. Peterson.—If we can buy coking coal cheaply outside there are several advantages in buying outside. One advantage is that we can spread the margin of danger, so to speak, such as strikes on the Railway, in not having to depend for supplies from one particular colliery varied in location, and the more the sources from which we draw our coal the better, provided the cost is equal.

President.—Then at the bottom of the same page you say "Today as the Board know, the low price of our own coal reduces our costs considerably". If you include overhead charges, the mere fact that the cost, as you take it into your cost account, is below the cost at which you produce your coking coal does not fully establish that?

Mr. Peterson.—No.

President.—Even supposing the cost were higher at present if you could raise your outturn at the figure which you hoped to get

Mr. Peterson.—The other point is very much more important. If we had not possessed our own collieries, our works would have been closed several times owing to strikes in the last three years. Our collieries happened to be on a different line from the places from which we get our bought coal and therefore we were able to keep our Works supplied with coal.

President.—That, of course, is a very important point.

Mr. Ginwala.—That means you have a certain insurance against risk. How much does that insurance cost you?

Mr. Peterson.—This insurance is intended to serve for the next 50 years.

Mr. Ginwala.—It is a diminishing charge?

Mr. Peterson.—Yes.

President.—On page 24 referring to paragraph 26 of Mr. Homi's statement you say "We do not follow the argument". Well, I think the suggestion contained in that paragraph is very plain indeed that, whereas when the slump came, companies all over the world were able to cut down their works cost to a very considerable extent, the Tata Iron & Steel Co. did not or could not. That is the suggestion. I don't think there is anything obscure in it: it may not be well founded, but I think it is plain enough,—"stringent measures were adopted everywhere to reduce the cost of labour per ton of product"

Mr. Peterson.—That is a question of the reduction of the wages of labour. "As also the cost of service". I don't know what is meant by 'cost of service' I do not know what it means.

President.—By cost of service he is thinking of what you call service expenses.

Mr. Peterson.—General service expenses?

Mr. Mather.—If any one contends that the cost of labour should be reduced, it does not necessarily mean that the wages per man should be reduced.

President.—That is the point. From what I know of the past history of labour difficulties at Jamshedpur, it was probably impossible to cut down the wages. But was it not possible to reduce the number of labourers employed?

Mr. Peterson.—Nothing particular is pointed out here to show what service cost should be reduced. It is merely an assertion.

President.—Quite apart from the line which Mr. Homi has taken, that is really a point there which the Company has to meet.

Mr. Peterson.—I am dealing with the statement made in that particular paragraph. Dealing with it generally, I think the Company took the ordinary steps that anybody else would take. That is to say, they informed the management what the exact financial position of the Company was, what the danger from increased expenditure was, and instructed it to reduce the expenditure to the bare minimum, which has been done. For instance, the expenditure on the town budget was reduced—I am speaking from memory—it was cut down from 12 lakhs to 6¼ lakhs in that particular year and it is further reduced to 3½ lakhs this year. The capital expenditure on the town was very rigorously cut down. Many additions to the plant which we had intended to instal were also cut down: many men employed here were sent away and their work was put on to other people. Economy was exercised in every direction.

President.—In so far as there was reduction in the number of labourers, it is not obvious from your works costs.

Mr. Peterson.—Are you thinking of Europeans or the actual workmen?

President.—I am thinking of the actual workmen much more, because, as far as I can judge, no reduction in the covenanted staff was feasible.

Mr. Peterson.—You must remember two or three conditions which would affect that question very considerably. One thing is that we had for nearly 24 months very grave trouble with labour. It was a serious question at one time whether the Works would be able to continue to run at all if the same spirit continued, and therefore we were anxious not to disturb the labour force further by cutting it down, because such a disturbance would have meant a much greater loss than any possible economy. The other point is that we have new plants coming into operation practically daily and, in order to get the crews required for these plants, we have to keep a certain number of additional men before they are actually required, and we have to train them. At the same time we have made and are making economies by taking men and putting them on to the new plant—supposing we employ a certain number of men in the Bar Mill, when the new Mill is in operation, we will transfer some of them there, thereby reducing the cost in that Mill. These are two important conditions.

President.—I am glad you have mentioned the difficulty of doing anything that might disturb the labour force.

Mr. Peterson.—There are many economies which could be effected here, but if the effect of insisting on economy is to produce a strike, whether in one department or in the whole of the Works, the loss would be so enormous that nobody would be justified in taking it.

Mr. Kale.—It has been stated to us that there is no possibility of any reduction being made in the wages of labour in India for this reason—that the wages have always been unreasonably low, so whatever increase has taken place is absolutely necessary to give the workmen even the ordinary standard of living.

Mr. Peterson.—Yes.

Mr. Kale.—Therefore there is no possibility really?

Mr. Peterson.—I agree with that. I myself am opposed to any reduction in the wages of labour because I think they were too low in the beginning. But that is a personal opinion. In any case any great reduction in actual wages is not possible at present.

President.—It makes it all the more important that if the wages of labour go up, you should exercise economy in the number of labour employed.

Mr. Peterson.—If they got a reasonable wage, the cost per ton will probably decrease. That process is going on.

Mr. Ginwala.—On this question of the cheapness of labour, it seems to me that if you pay a man 6 annas you get 6 annas worth of work, but if you pay him Rs. 6 you will not get 6 rupees worth of work. Personally I am not at all a believer in the theory that cheaply paid labour is cheap labour. It is quite the reverse. You take a particular class of labour for particular kind of work and pay it what it is worth. You cannot afford to pay it for more than it does. At any rate its efficiency will only increase gradually; therefore I cannot agree that if you paid it Rs. 6 it would do Rs. 6 worth of work.

Mr. Peterson.—The only effect of that would be that we would not get coolies. That is really what is happening in the coal mines just now. If you increase the wages of coolie labour they do not work. If you increase it they would work for 5 days instead of 6, and if you increase it more they will work for 4 days and so on.

President.—That is a thing that can only be altered by big social changes.

Then on page 29 at the bottom you say "An ordinary plant of this size in America would have as technical managers seven men, while we are at present employing two" Who are the two men?

Mr. Peterson.—Mr. Tutwiler and *Mr.* Alexander. In an American plant there would be a President, Vice-President, a General Manager, under him a Works Superintendent and 3 Assistant Superintendents apart from the men employed as Superintendent of the open hearth, Blast furnace and so on.

President.—There would be a heavier organization?

Mr. Peterson.—A very much heavier organization.

President.—Would the President and Vice-President necessarily be technical men?

Mr. Peterson.—Not always: they may be or may not be.

President.—I think it is going a little far to rank them as technical men?

Mr. Peterson.—Sometimes they would be. Probably the Vice-President would be.

President.—They might be people with considerable experience of business connected with iron and steel but without technical qualifications in the ordinary sense.

Mr. Ginwala.—In that case, they don't have Managing Agents and a Bombay office.

Mr. Peterson.—No.

Mr. Ginwala.—So that the economy is not as real as you suggest.

Mr. Peterson.—I don't say that there is any economy. I am answering this specific statement. You must read my reply in connection with the statement to which it is a reply. He says "Very few plants in America of the size and capacity as the Tata Iron and Steel Co. works would go in for a General Manager and his establishment charged over and above a General Superintendent and his staff". That is not correct.

Mr. Ginwala.—You go on to say that you employ two men as against 7 in America. My point is this. These men—President, Vice-President and others—also supply the place of agents in this country.

Mr. Peterson.—The President and—and Board might be doing that. I think that the Vice-President would be a technical man. He would probably take the same place as Mr. Tutwiler here.

Mr. Mather.—The President and Vice-President, as far as I have been able to understand the organisation of American Steel Companies, would in effect perform the duties which in an English concern would be done by the Chairman and Managing Director. The Vice-President would correspond to the Managing Director.

Mr. Peterson.—The Vice-President would occupy the same position as Mr. Tutwiler does here.

President.—Mr. Tutwiler is not a Managing Director.

Mr. Ginwala.—Under ordinary conditions of business, the necessity for an additional organisation, such as agents, does not arise in any other part of the world.

Mr. Peterson.—That is due to the preculiar conditions in India. It is impossible to replace them at present. It may be possible to do so in another 20 or 30 years.

Mr. Ginwala.—It may or may not be possible. The tendency is rather on the increase.

Mr. Peterson.—Yes.

President.—With reference to your works at Jamshedpur, there is a difficulty. A great deal of work cannot be done at Jamshedpur. You must have another office somewhere else whatever you call it.

Mr. Peterson.—There must be another office somewhere else.

Mr. Ginwala.—For finance, etc., there must be another office, I take it.

Mr. Peterson.—For many other things. There must be a big organisation.

President.—It must be at some centre where there are many men interested in commerce and industries: otherwise you won't be able to interest them in the affairs of the Company. Is that your view?

Mr. Peterson.—The Company has to be in touch with so many different individuals. It has to take care of the debenture holders in England, and the ordinary shareholders in Bombay; and it has to take care of the interests of Banks and other people who lend money. They would certainly not go to Jamshedpur.

Mr. Ginwala.—Is there in the Managing Agents' office any Director who is solely in charge of steel?

Mr. Peterson.—There are three members of the Agents' firm who are practically devoting their entire time to the work of the Steel Co.

Mr. Ginwala.—How many Directors are there?

Mr. Peterson.—In Tata Sons Ltd. there are 8.

Mr. Ginwala.—Of these, three are practically devoting their whole time to steel?

Mr. Peterson.—They devote the whole of their time, with the exception of small matters, to the Steel Company. A great portion of the time of the head of the firm is devoted to the affairs of the Steel Company.

Mr. Ginwala.—In addition to these three?

Mr. Peterson.—Yes, I will describe the whole organisation. Mr. R. D. Tata devotes three to four hours to the Steel Company. Mr. Padshah devotes the whole of his time to the Steel Company. I practically devote the whole of my time. There is nothing that comes from the Steel Company that we do not see and do not handle. With regard to legal matters, the legal member of the firm, Mr. Ghandhy, is always consulted, and on other occasions of course the other Directors are called in for consultation and that sort of thing.

Mr. Ginwala.—You have not on your Board a man corresponding to the Vice-President who is an expert?

Mr. Peterson.—It would not be possible to find such a man in India with technical experience. If you mean a non-technical man with business and administrative experience, we have many such men.

Mr. Kale.—Is there any man who may be described as an expert?

Mr. Peterson.—Expert in the manufacture of steel?

Mr. Kale.—I mean on the Board?

Mr. Peterson.—No.

President.—Apart from being an expert in the manufacture of steel, is there a man who has practical experience in the management of steel works?

Mr Peterson.—Yes, such practical experience as has been obtained in the management of this Company, which is after all 12 to 14 years.

President.—I mean, experience elsewhere?

Mr. Peterson.—No.

President.—All the Directors must have had some experience by now, I admit.

Mr. Ginwala.—Is there any Director who has made it a point to study steel business in other countries?

Mr. Peterson.—Mr. Padshah, who is a Director of the Agents' firm, spent a very considerable time both in America and in England studying the management of steel businesses. He has been studying it from 1905 or 1906—since the Company was first contemplated.

Mr. Ginwala.—Mr. Padshah is the only Director who has done so?

Mr. Peterson.—Everybody else at one time or another has studied it in the same way. I have done it myself in England.

Mr. Ginwala.—We are all getting older as the days pass. Are there any men to take the place of those now at the helm of affairs?

Mr. Peterson.—Yes. You don't ask me to give you names?

Mr. Ginwala.—You may be keeping them somewhere outside the public gaze?

Mr. Peterson.—The whole thing is carefully organised. It is what you may call a fluid organisation. If a man is required in a hurry he can be found.

Mr. Kale.—The allegation is that you try to rule from Bombay.

Mr. Peterson.—It is not correct. What we do from Bombay—what we actually have always tried to do—is to supply a supplement to the technical management here. We supplement the General Manager's work in every way that we can. We help him, we assist him and we get suggestions from others and put them before him. On all expert technical questions, unless a special outside consulting engineer is called in, the General Manager would have the final say. All questions of finances, sales, business generally of that type, would be dealt with by the Agents and Board and they would lay down the policy.

Mr. Kale.—It has been suggested that one of the Directors might reside in Jamshedpur.

Mr. Peterson.—The Directors, and the Directors of the Agents' firm, are constantly visiting the works of the Iron and Steel Co., though not in a body. Some of them are interested in the subsidiaries. They are continually at Jamshedpur, and I don't see that much advantage would be gained by a Director permanently residing in Jamshedpur. That would only tend to weaken the authority of the executive.

Mr. Kale.—A flying visit is one thing and a long stay is another.

Mr. Peterson.—Mr. Padhshah spent three months last year in Jamshedpur.

President.—But that was in the absence of Mr. Tutwiler.

Mr. Peterson.—Mr. Alexander was officiating. Mr. Padshah also was here.

Mr. Ginwala.—Do you see any difference between your organisation and that of public bodies like the Port Trust and Municipal Corporations?

Mr. Peterson.—None.

Mr. Ginwala.—Don't you think that in a new industry it is a drawback?

Mr. Peterson.—There is this difference. We are not bound down by rules and regulations. What is exactly in your mind?

Mr. Ginwala.—Take the case of Railways. Government manage Railways with the help of experts. In that there is a real difference between a commercial enterprise and a Government enterprise.

Mr. Peterson.—Experts in a commercial enterprise are judged by commercial results. In some of the Government institutions, they are not. That is the real difference. If a particular man does not get results, it is immediately known to the Directors and the Agents' firm, and we would not hesitate to make a change.

Mr. Ginwala.—Take the case of the Corporation running a tramway company, where they employ experts. They would have all the organisations that you have. But it is not the same thing as a commercial firm. In the case of a commercial firm, what we may call in popular language the 'master's eye' comes largely into the business.

Mr. Peterson.—In modern large business of this type, the masters are the shareholders and what they actually do is to exercise control through other people. They must, they cannot do it in any other way. Private business used to exist 30 or 40 years ago.

Mr. Ginwala.—They exist even now.

Mr. Peterson.—Very few of them.

Mr. Ginwala.—Mr. Ford is a great business organiser.

Mr. Peterson.—He is an exceptional man. I don't think that you will find a man of that type controlling large steel works.

Mr. Ginwala.—Mr. Carnegie, for instance.

Mr. Peterson.—He died sometime ago.

Mr. Ginwala.—You cannot say that such organizers have ceased to exist.

Mr. Peterson.—I don't think that there is any steel company which is privately owned.

Mr. Mather.—I think that there are very few. But what Mr. Ginwala has in his mind is this. For instance in the case of a European steel company you have what you call 'master's eye' exercised by a Chairman or Managing Director who has grown up in the industry.

Mr. Peterson.—That is exactly what is happening here.

Mr. Kale.—Who has grown up in the business?

Mr. Peterson.—Mr. Tutwiler has grown up in the business from the start!

Mr. Kale.—He is an expert adviser?

Mr. Peterson.—What Mr. Mather means is that the man has worked in it.

Mr. Mather.—A considerable proportion of the technical staff and a considerable proportion of the Directors would be concerned with the industry in one capacity or another from their very early days.

Mr. Peterson.—The Managing Director of Messrs. Dorman Long & Co. might have served 30 or 35 years before he became the Director. I am pointing out that it is impossible here because the work has been in existence only for 13 years.

Mr. Ginwala.—Have you taken steps to create those conditions?

Mr. Peterson.—We are taking steps. If you wait until these works have been in existence long enough, you will have men coming from the bottom right up to the top. That cannot be done in 10 years.

Mr. Ginwala.—Your Company was started 15 years ago. You started making steel 12 years ago. You may have those men, but where are they?

Mr. Peterson.—We have. I am afraid you must take my word for it. I cannot produce them before you and satisfy you that they are there.

Mr. Ginwala.—The outside world can only infer from what it sees, and not from what has been kept under lock and key.

Mr. Peterson.—What does it see?

Mr. Ginwala.—It sees that there are no such men at present.

Mr. Peterson.—The outside world knows very little about this. The men are there.

Mr. Mather.—May I ask one question arising out of that? Among those seven men who, you tell us, would in America be employed on the work done here by Mr. Tutwiler and Mr. Alexander, you have included three Assistant Superintendents. That would be an excessive number in any other country for a plant of your size, would it not be?

Mr. Peterson.—It might be.

Mr. Mather.—I don't think that there would be so many. There would be only one in a plant of the size you have here.

Mr. Peterson.—You know much better than I do.

Mr. Mather.—I think that it is distinctly high.

Mr. Peterson.—You would not say that our present management is overstaffed at the top?

Mr. Mather.—I don't say that.

Mr. Peterson.—That is the point I am trying to meet here.

Mr. Ginwala.—I would like you to give us approximately the dates of your rails contracts in order to enable us to see on what basis you have fixed your sale price.

Mr. Peterson.—Do you want the dates on which negotiations were conducted or the dates on which contracts were signed?

Mr. Ginwala.—We want the dates on which negotiations were completed.

Mr. Peterson.—I shall give you a statement showing the dates on which these contracts may be regarded as having been concluded. Negotiations were practically completed a year before they were signed.

Mr. Ginwala.—May I take it that you have taken your cost of production for 1917 or 1918 as your basis?

Mr. Peterson.—I will give you the actual figures, if you want. Rs. 90 was taken as the works cost.

President.—Which contract are you referring to?

Mr. Peterson.—The Palmer Railway contract. I did not negotiate these contracts myself.

President.—According to Statement No. XXIII, the Palmer Railways contract was made in the year 1918. Presumably you took the figures of 1917-18 as your basis?

Mr. Peterson.—Rather the cost expected in 1920.

Mr. Ginwala.—We will take 1917-18 costs.

Mr. Peterson.—May I point out that these rail contracts were entered into on the assumption that the new mill would be working and supplying the rails required.

Mr. Ginwala.—I want to know whether it would be safe to take, for instance, your works cost. Supposing you were selling in 1917-18, which is prior to the date of the conclusion of the contract at Rs. 82, then you can take depreciation for that year, you can add then your Bombay charges, interest on working capital and then profits on the fixed capital. If you bring up the figures reasonably near Rs. 122, we shall be able to say, anyhow as conditions stood then, your contracts were not unreasonable.

Mr. Peterson.—You want a statement made out.

President.—I think that we would like to have it in the way in which they would have calculated then.

Mr. Peterson.—Several factors must have entered into our calculations.

Mr. Ginwala.—But they must have some relation to these different items.

Mr. Peterson.—Not necessarily. That was in the middle of the war. What we must have endeavoured to calculate was what the position would be when the war ended. We must also have taken into our calculations when the war was going to end.

Mr. Ginwala.—In determining your selling price, you take into account your works cost and these other charges. That is one element that you cannot ignore. You can make adjustments by saying that they may come down. That is true. You must have necessarily in mind your works costs *plus* these additional charges which would make it worth your while.

Mr. Peterson.—Yes.

Mr. Ginwala.—You take into account the prices current in those days as far as they could be ascertained.

Mr. Peterson.—Do you mean the prices of raw materials?

Mr. Ginwala.—No, I mean the prices of rails.

Mr. Peterson.—They were all controlled prices. There was no market price then. We were not allowed to sell a ton of rails.

Mr. Ginwala.—You must have based it on your works costs.

Mr. Peterson.—That is what we did.

Mr. Ginwala.—You have not indicated anywhere what those calculations were.

Mr. Peterson.—Our works costs we took at Rs. 90 and overhead charges Rs. 30.

Mr. Ginwala.—Have you taken these as reasonable costs with reference to your experience in that year?

Mr. Peterson.—Do you mean that you want to be able to form an opinion whether all the various points were considered?

Mr. Ginwala.—You may take Rs. 90 or Rs. 100. But the question is whether it was a reasonable price to have accepted under those conditions. That is the point.

Mr. Peterson.—Many considerations entered into it.

Mr. Ginwala.—The figures for that year must bear some relation to the price you were prepared to accept.

Mr. Peterson.—They would bear some relation.

President.—You know definitely what your works costs were returned at in 1917-18 and possibly for several months in 1918.

Mr. Peterson.—It was probably based on the reduction of cost that would arise from bringing in the new plant.

Mr. Ginwala.—If you take Rs. 82 as your works costs and add the various charges that I mentioned, you may be able to show that the price which you accepted was a fair and reasonable price.

Mr. Peterson.—We could send you a statement.

Mr. Ginwala.—Your total depreciation comes to Rs. 20,21,000, on the plant that was in operation then?

Mr. Peterson.—Yes, for the year.

Mr. Ginwala.—You will add your interest on the working capital that you had at that time, your Bombay charges and the Agents' commission.

Mr. Peterson.—What are we to do with pig iron? There must have been surplus pig.

President.—I think that it is difficult to apply our method to the problem as it would exist year after year right through the period.

Mr. Ginwala.—I don't want the figures to be made absolutely accurate. I just want to see whether this was a reasonable contract.

Mr. Peterson.—There was very little difference in depreciation that was taking place. We take depreciation at Rs. 24 lakhs. This is Rs. 21 lakhs.

President.—That year gives the best evidence as to your works cost?

Mr. Peterson.—Yes.

President.—As to the overhead, you had to consider how you were going to stand right through the period of the contract. Your overhead in that particular year does not seem to me to be a guide.

Mr. Peterson.—This figure is based on the estimate prepared by the Consulting Engineers. They reckoned on the new rail mill being ready in 1920 originally and in 1921 certainly; so that after one year they would have got these rails rolled on the new plant. If the works cost on the old plant was Rs. 82 a ton, to assume the works cost at Rs. 90 on the new plant would not be unreasonable.

Mr. Ginwala.—I am not saying that. You are making your own comment. I am simply trying to find out. The suggestion is that these contracts were not profitable and that you should not have entered into those contracts. It has been suggested that the trouble of the Company is due to these contracts having been accepted at a low price. I am trying to clear it up as far as possible, but apparently you don't wish to help me.

Mr. Peterson.—I will put in a statement..

President.—I think that it is certainly desirable that you should, either verbally or in writing, if you are prepared to do so, give the general calculations on which these contracts were made as a general basis. My only difference with Mr. Ginwala is simply this. As regards overhead charges—the overhead charges of 1918-19 do not seem to be of importance—what is important is the overhead charges that you would have to carry from 1920-21 onwards. At that time your estimates of the Greater Extensions were probably somewhere near your original figures.

Mr. Ginwala.—Then the point would arise whether they made a sufficient allowance for increased overhead charges.

Mr. Peterson.—Decreased overhead charges.

Mr. Ginwala.—Increased or decreased, we cannot judge until we know what allowance was made.

Mr. Peterson.—At that time, the estimate of the Greater Extensions had not been increased. They were expected to come into operation. These contracts were based on the Greater Extensions.

Mr. Ginwala.—Surely you did not expect them to come into operation in 1920?

Mr. Peterson.—At the time these contracts were made they were expected to come into operation. 1920 was the period fixed by the Consulting Engineer four years from 1916. The Greater Extensions were supposed to be in operation by this time and the railway contracts were made on that assumption. Had the war continued another two years they would have been in operation.

Mr. Mather.—You think the continuance of the war would have resulted in earlier construction?

Mr. Peterson.—Certainly, it would.

Mr. Ginwala.—The question is whether the particular action you took was advisable or not. You may have taken many other factors, as you expected them at the moment, into consideration. I am prepared to make allowance for these so long as I am satisfied with your works cost and other overhead charges.

Mr. Peterson.—I am prepared to make out a statement but you must take into account many other considerations.

President.—I think it would be desirable to have that.

Mr. Ginwala.—That sort of criticism has been made and probably you have heard it.

Mr. Peterson.—I have made it myself and know the answer to it.

Mr. Ginwala.—Do not you think it worth your while to correct that impression?

Mr. Peterson.—Yes. I will give you a note.

Mr. Kale.—Certain enamel works in Calcutta in their statement before us wanted us to recommend that the kind of steel which they were using as raw material should be exempted from duty, but we realised at the same time that you were going to produce that kind of steel and you were under contract to supply that kind of steel to the Enamel Works here. I should like to know whether it would be possible to have this kind of arrangement, exempting from duty only that particular kind of steel, or that quantity of steel, which would be used by the Enamel Works outside?

Mr. Peterson.—Can you tell me the gauge of the steel sheets they were using?

Mr. Kale.—I do not know that. They say that the Enamel Works here would get their steel at a favourable price while they would have to pay a duty on the imported steel.

Mr. Peterson.—Do you know what their consumption is?

Mr. Kale.—It is quite a small quantity—some 200 tons a year for one firm.

Mr. Peterson.—That could be settled very simply by their applying to us. If it is for a small quantity we might give it to them on the same terms.

Mr. Kale.—They applied to you: they showed us their correspondence with you. It seems they did not receive a favourable reply.

Mr. Peterson.—I do not exactly remember the reply.

Mr. Mather.—There are three of these companies.

Mr. Peterson.—I think probably our answer was that we were not making these sheets.

Mr. Kale.—They wanted to know if you were going to make them.

Mr. Peterson.—Did they offer to take a definite quantity? I do not think they said that. I remember to have seen some correspondence. I do not think they have asked us to enter into a long term contract for the supply of the sheets.

Mr. Kale.—Will you look it up and see?

Mr. Peterson.—Certainly.

Mr. Kale.—It will not be possible for us to recommend exemption to small quantities of steel that would be used by the Enamel works while you are supplying the steel in India. Will it be possible for you to supply the small quantity that will be needed for those Enamel works?

Mr. Peterson.—Yes. We might be prevented from giving the same terms by some clause in the agreement with the works here. I cannot give a definite promise until I know what they want and unless they are prepared to enter into an agreement.

Mr. Kale.—They will probably be prepared to enter into an agreement if you are prepared to give them the same terms as you have given to the Enamel Works here.

Mr. Peterson.—We may not be able to enter into the same arrangement.

President.—Their present duty is 15 per cent. and if the duty on steel is raised, and their duty correspondingly raised, it would reduce their market.

Mr. Peterson.—I see the difficulty. I think we can supply to them if it is a small quantity.

President.—It is undesirable to introduce a rebate system for two or three very small companies.

Mr. Peterson.—I shall look up the correspondence and see. I think there will be no difficulty.

Mr. Kale.—The other day we were discussing the question of the advantage that you derived in remitting your money for the purposes of your machinery for the Greater Extensions. Can you give me an idea as to the actual benefit you derived?

Mr. Peterson.—I may explain that the view generally taken by the Directors is this: it is not the business of the company to speculate in exchange because, although on one occasion you may make a considerable sum in exchange, on another occasion you may lose. Sometimes if the rate is exceptionally high you may prefer to borrow the money and wait till the exchange improves, but generally speaking they are not inclined to speculate in exchange.

Mr. Kale.—What we want to know is how far the benefit derived from favourable exchange was a set off against the higher price of the machinery you bought.

Mr. Peterson.—The pre-war normal was 3·12: I do not know at what figure it will stabilise. It is to-day about 3·30. Our average was 3·22.

Mr. Kale.—On how many dollars—that is my point? On how much value of the machinery?

Mr. Peterson.—I will send you a statement giving the information. The whole of the value of the American machinery was remitted at that rate, at about 3·22.

President.—That is at 3·22 rupees as compared with 3·12 Rs. which is the normal rate.

Mr. Kale.—Will the value of the American orders come to Rs. 8 crores—for the total plant?

Mr. Peterson.—More than that.

Mr. Kale.—Can you give us the price of the machinery when the order was placed?

Mr. Peterson.—When an order for a large plant was placed a certain amount would be payable with the order, a certain amount would be payable in instalments and a certain amount on final delivery.

Mr. Kale.—May I then take it that there was a considerable set-off against the higher price?

Mr. Peterson.—We might have lost in exchange which we have not done.

Mr. Kale.—It did counteract your high prices?

Mr. Peterson.—It compensated that to a certain extent, but not much.

Mr. Kale.—What I want to know is whether, if you have had to pay more in dollars, you paid less in rupees.

Mr. Peterson.—Taking the pre-war standard, we had to pay more rupees.

President.—You have lost very little but you have probably gained.

Mr. Ginwala.—What is the present exchange?

Mr. Peterson.—3·30.

President.—The rate of exchange is not normal : so it is a matter of accident.

Mr. Ginwala.—It is suggested that you bought your plant at a time when you had to pay more than you would have to do now. Therefore what you have got to show is this : when you bought you may have paid at this exchange of 3.22, but if a man is buying now the same thing he will have to pay at 3·30. So what you may have paid more by way of price, you might have made good by way of exchange.

Mr. Peterson.—We shall work it out and show you. It does not come to much either way.

Mr. Mather.—On page 2 of your reply to Mr. Homi's representation I think there is a slight mistake. You say " as Mr. Hugo Stein said last summer in Berlin ". Should it not be Stinnes?

Mr. Peterson.—Yes.

Mr. Mather.—In any event the productive capacity of labour in Germany in the summer of 1923 is not very much value as a criterion even in other European countries.

Mr. Peterson.—The argument there is that the conditions in the world will have their effect on every country. You find the same conditions in every country.

Mr. Mather.—We hope not. Lower down you say " The conditions in India for the production of steel in hundreds of thousands of tons are not at present suitable ". But you are undertaking that manufacture?

Mr. Peterson.—Yes. That does not mean that we shall not make them suitable.

Mr. Mather.—You are going to alter the conditions?

Mr. Peterson.—Yes.

Mr. Mather.—On the top of page 3 you say " It is frequently forgotten that the Steel Co. works 8 hours shifts as against the 12 hours shifts of the world's practice till recently." At any rate during the period since the war, when you had difficulty in meeting outside competition, except in the U. S. which does not compete much with the Indian market, 8 hours shifts have been the regular practice in England and on the Continent since the war. Your difficulty in meeting European competition has not been due in any way to your different working hours.

Mr. Peterson.—Probably not.

Mr. Mather.—Lower down on page 3 you raise the question of the number of Europeans in the Open Hearth Department. I think you accept that, regarding the furnace plant as a whole, there are more Europeans employed in a European plant than here.

Mr. Peterson.—Yes.

Mr. Mather.—At the bottom of page 4 you tell us " The amount of pig iron in any tap depends upon the quality of the charge on the furnace ". That is not correct. The amount of pig iron in one tap depends entirely on the size of hearth.

Mr. Peterson.—Yes.

Mr. Mather.—On page 5 you are discussing the extra amount of coke you would need. " If the ash in the coke in one furnace be twice as high as the ash in the coke in another, say increase from 12 to 24 per cent., then the carbon is diminished from say 87 to 75 and therefore for carbon alone the coke required would be 16 per cent. more to detach the unwanted oxygen." That is not the complete statement of the extra coke required which we expected the Company would give us. Then you say " If the temperature required is 900° Centigrade an enormous amount of heat is necessary ". What is the meaning of that figure? The highest temperature is very much above 900° C. Then you say " that the amount of coke necessary would depend upon the thermal power of the coal used." Actually it would depend on the thermal power of coke.

Mr. Peterson.—Coal is a misprint for coke.

Mr. Mather.—Then you tell us lower down on the same page " These impurities are bad conductors of heat ". Conduction of heat has little or no bearing on the subject. The amount of fuel required is the same whether they are good or bad conductors. Then again at the bottom of the page you say " the amount of coke would depend probably upon the structure of the furnace itself ". But it was your Company which was responsible for the design of the furnace, so that no criticism about coke consumption could be met merely by talking about the furnace design.

Mr. Peterson.—It might pay us to alter the design of the furnace in order to get higher profits at a time of high prices. That actually happened.

Mr. Mather.—At the bottom of page 8 you tell us " the actual production that is considered is the production of standard materials, and the Indian State Railways specifications are known to be the hardest in the world ". I presume you mean for rails?

Mr. Peterson.—We understand that is so.

Mr. Mather.—I do not think they are.

Mr. Peterson.—That has always been our impression.

Mr. Mather.—They are harder than in most countries. It is practically the same as the British Standard specification. In some points it is easier for you to work.

Mr. Peterson.—They may have been altered now.

Mr. Mather.—On the top of page 9 you say " It may be possible at each heat to obtain more ingots up to a less exacting standard...... " The amount of ingots which you obtain per heat depends on the size of the furnace. What is really meant is " in a given time "

Mr. Peterson.—Yes.

Mr. Mather.—On page 14 you tell us something about bricklaying. Are you sure the comparison is justifiable? You are comparing the higher output of 2,700 bricks laid by the American bricklayer, presumably for ordinary building work, with the work of the Scotch bricklayer on the furnaces.

President.—It is just to show the inefficiency of the Indian labourer.

Mr. Mather.—On page 22 you refer to Appendix B—output, fuel and production per man and so on in England. I have not been able to get my copies of the originals. So I accept your figures as they stand at the moment for 1920.

Mr. Peterson.—I have got the printed statement from which these figures are taken.

Mr. Mather.—My point is this: assuming these figures to be correct for 1920, the correct figures for 1921-22 which I have got are certainly a good deal more favourable than in 1920.

Mr. Peterson.—I do not know. This had reference only to the alleged greater efficiency of plants in other countries which we challenge.

Mr. Mather.—The more recent figures would certainly show better relation.

Mr. Peterson.—I only put in the figures to show that the same considerations which apply here will apply to other countries.

Mr. Mather.—I do not think that if further figures were got it would prove as unfavourable to you.

Mr. Mather.—On page 24 you quote predictions that the Iron and Steel industry in England is dying. You do not attach any value to it?

Mr. Peterson.—I do not know. It is not a prediction. It is the public statement of the Chairman of a large English Company. That is from the " Statesman ".

Mr. Mather.—I think you would be rather unwise if you regarded future competition on the basis of the English steel competition dying. It does not add to the value of the statement. One knows of course that the Steel industry is passing through a difficult period.

On page 30, in reply to Mr. Homi's para. 71, you tell us that the machine shop has been fully occupied up to the present on constructional work for the Greater Extension That is machine shop 2, I suppose?

Mr. Peterson.—Yes.

Mr. Mather.—That work will fairly rapidly come to an end. Can you tell us what you intend to do with that shop when this work is finished?

Mr. Peterson.—We have contemplated the manufacture of wagons, but whether we should do it or not we cannot say at present. We have not decided on a definite plan. It will depend on circumstances.

Mr. Mather.—Then on page 35 you tell us " that it is not fair to compare the erection of a plant in America and the erection of a plant in a country where the plant was not made during the war when the seas were infested by enemy submarines." If your plans for the extensions were not completed till 1919 you would not have serious difficulty. Distributed over the whole of your extensions scheme, that difficulty would have been extremely small.

Mr. Peterson.—We were certainly hampered. Several consignments were actually sunk at sea. There was the difficulty of obtaining freight. The general conditions for about two years after the war hampered the construction of the plant very considerably. Then there was the difficulty arising out of obtaining priority.

Mr. Mather.—That would not affect at all all machinery ordered after 1918.

Mr. Peterson.—No. Except for the general conditions.

Mr. Mather.—The effect on the whole scheme would not be very serious.

Mr. Peterson.—Nothing very serious, except so far as higher freights and shortage of freight were concerned.

सत्यमेव जयते

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., recorded at Jamshedpur on the 20th December 1923.

President.—We will start with the letter of the 19th December 1923.

Mr. Ginwala.—I want to compare the works costs of various departments for 1916-17 with those of 1921-22 and I shall take up each department separately. We shall start with pig iron. The total works cost increased from Rs. 18-8-0 to Rs. 34-8-0. the increase being Rs. 16. In that, the main items of increase are the following :—

The first is iron ore. It rose roughly from Rs. 3 to Rs. 4-8-0. How do you explain that?

Mr. Peterson.—It is due to the increased cost of ore for the following causes. It is due, in the first place, to an increase in the contractor's rate of freight which was given in June 1920. It amounts to 0-7-6 per ton: secondly, to the increase in wages of our own labour which works out to three annas per ton of ore; thirdly to the increase in the cost of stores, coal, oil, etc., which amounts to three annas per ton of ore; and, fourthly, to the increase in the extension of tracks to develop mines which amounts to two annas per ton of ore.

Mr. Ginwala.—Then there is a difference in the yield too.

Mr. Peterson.—That is not very serious. It is due to the slight deterioration in the quality of the ore which dropped from 60.89 to 59·29 per cent. iron.

Mr. Ginwala.—The next item of increase is coal. It rose from Rs. 3-8-6 in 1916-17 to Rs. 8-0-3 in 1921-22, the difference being roughly Rs. 4-8-0.

Mr. Peterson.—The higher consumption of coke per ton of pig was due to the higher percentage of ash and also to the fact that we were making more foundry iron as compared with 1916-17. I can give you comparative figures showing the percentage of ash.

1916-17 ash 19.77 per cent.
1921-22 ash 24·15 per cent.

Mr. Ginwala.—The next item is the increase in the cost of dolomite. It rose from Rs. 1-13-0 to Rs. 3-4-0, an increase of Rs. 1-7-0 in the cost of dolomite used per ton of pig iron.

Mr. Peterson.—That is due to an increase in the contractor's rate of seven annas per ton of dolomite which was agreed to in July 1918; to an increase in the wages of our labour which amounts to four annas per ton; to an increase in the cost of stores, coal, oil, etc., which amounts to eight annas per ton, and lastly to an increase in the cost of removing overburden which amounts to four annas. The higher consumption of dolomite is due to the inferior quality and also to the higher consumption of coke per ton of pig iron. I can give you the comparative analysis of the dolomite if you want it.

	CaO.	MgO.
1916-17	30·19	20·30
1921-22	29·67	20·11

Mr. Ginwala.—The next item is labour which rose from Rs. 1-10-0 to Rs. 2-12-0.

Mr. Peterson.—That is due to the increase in wages which was given approximately between the 1st of March 1920 and the 1st of June 1920 as a result of the first strike—15 per cent. up to May and 40 per cent. (which includes the 15 per cent.) from the 1st of June. It is also due to the fact that we are employing more labour in the handling of pig iron which we sell.

President.—As you had a smaller quantity to sell in 1916-17, most of it was going on to the ladles in the shape of hot metal?

Mr. Peterson.—Yes.

Mr. Ginwala.—The next item is steam. It rose from 14 as. to Rs. 1-12-0.

Mr. Peterson.—That is due to the increased cost of steam coal which rose from Rs. 4-5-0 to Rs. 8-3-0. It is also partly due to the increase in wages of the men in the boiler plant from March 1920 which corresponds with the increase that I have already given with regard to labour.

Mr. Ginwala.—The next item is Yard Switching. It rose from 7 as. to 15 as.

Mr. Peterson.—That is due to the high price of steam coal and the increase in the cost of labour.

Mr. Ginwala.—What does it include?

Mr. Peterson.—The handling of all the traffic the works.

Mr. Mather.—About the cost of steam: a good deal of blast furnace gas is burnt under boilers for steam raising. That of course would not cost more?

Mr. Peterson.—No.

Mr. Mather.—I suppose you took the average cost of raising steam for all the works?

Mr. Peterson.—That is the system.

Mr. Mather.—You would not change a lower rate to the blast furnaces?

Mr. Peterson.—No.

Mr. Ginwala.—We will now take the open hearth. In the open hearth, your works cost rose from Rs. 41-2-0 to Rs. 68-13, a difference of about Rs. 27-10-0.

Mr. Peterson.—Yes.

Mr. Ginwala.—You say that the difference between cost of net metal is Rs. 12 per ton, whereas the difference between cost above metal is Rs. 15 per ton. How do you explain this difference of Rs. 12 in net metal and Rs. 15 in the other case?

Mr. Peterson.—The difference in the cost of net metal is Rs. 12 and it is covered by the increased cost of pig iron. The yield also has deteriorated by about 10·5 per cent. from 94.35 to 83.86 per cent.

Mr. Mather.—That is merely a method of accounting.

Mr. Peterson.—I am going to explain that that is not really the case. The method of finding out the yield has changed from 1st April 1921. Up to 1920-21, the yield was calculated on the total consumption of pig and scrap, but after that it was calculated on the total metallic mixture. If it was calculated by the old method, the present yield would come to about 90 per cent.

Mr. Mather.—What are these raw materials that are included with pig and scrap?

Mr. Peterson.—Pig, scrap, ore, ferro manganese, ferro-silicon, and aluminium.

Mr. Ginwala.—The main items of increase under this head are the following. The first is fuel including producer gas which went up from Rs. 2-9-0 to Rs. 6-3-0.

Mr. Peterson.—The increase is due to—

(*a*) the high cost of coal which rose from Rs. 5-2-0 to Rs. 7-12-0;

(*b*) the increase in wages which has already been explained, and

(*c*) the higher consumption of coal which rose from 864 lbs. per ton of ingots to 1.216 lbs. in 1921-22 which is due to the fact that less steel was actually being produced owing to the tightening of specifications.

Mr. Mather.—Is this 1,216 lbs. per ton worked out on some careful basis, allowing for the Producer Gas actually used on the open hearth? Some of that gas goes to the other furnaces.

Mr. Peterson.—They have calculated that. It is not measured; it is an estimate made by the officer in charge of the department and passed by the General Manager. You may take that as fairly accurate.

Mr. Mather.—Then you give as part of the explanation the rise in the cost of labour. Is labour on the Gas Producers included under fuel?

Mr. Peterson.—Yes. That will be all costs connected with fuel.

Mr. Mather.—Including steam and miscellaneous costs?

Mr. Peterson.—Yes. Fuel for miscellaneous purposes was in 1916-17 included in Gas Producer fuel. In 1921-22 it amounted to As. 2·24. The total increase in fuel therefore was from Rs. 2-9·68 to Rs. 6-0.64 *plus* 0-2·24 or 6-2.88.

Mr. Ginwala.—The next item is Refractories which rose from As. 15 to Rs 3.

Mr. Peterson.—The increase is Rs. 2-1-0. It is due to other causes besides the increase in the cost of bricks, limestone, coke, etc. Limestone—the increase has been from Rs. 5-13-0 to Rs. 6-7-0. Coke—the increase has been from Rs. 6-3-0 to Rs. 13-10-0. Dolomite—the increase has been from Rs. 3-6-0 to Rs. 5-3-0. Firebricks—the increase has been from Rs. 83-10-0 per thousand to Rs. 142-8-0 per thousand.

Mr. Mather.—The consumption must have gone up as well as the cost per unit.

Mr. Peterson.—Consumption has probably increased. I have not got the figures of consumption here.

Mr. Mather.—Do you know that they have increased?

Mr. Peterson.—Do you mean the actual use of bricks per ton of ingot?

Mr. Mather.—Yes.

Mr. Peterson.—Part of the increase has been due to the alteration of headings of accounts. It is another case in which the same thing is not included under the same head in the cost accounts of each year. In 1916-17 bricks and clay were shewn separately.

Mr. Mather.—They are not shewn separately in the Statement.

Mr. Peterson.—Not in the cost accounts. They are included in refractories. I don't think that there has been any great increase in consumption.

Mr. Mather.—The price you have given has gone up by 200 per cent.

Mr. Peterson.—As I said, the price of bricks is not the only cause of increase. It is a question of the increase in the consumption of dolomite, limestone and things of that kind.

Mr. Mather.—I don't mean that there has been any increase in bricks only but in the refractories as a whole.

Mr. Peterson.—Yes.

President.—The statement does not relate to the open hearth only. So there is reason to believe that it was specially higher that year.

Mr. Peterson.—Apparently there has been some alteration in the system of accounts, but I think that we can hardly alter the figures now. In 1916-17 under refractories they excluded most of the repairs on ladles which are now included.

Mr. Mather.—These must have been put somewhere else.

Mr. Peterson.—They were shown separately in 1916-17, but unfortunately in drawing up this statement they have not included those under the head refractories.

Mr. Mather.—All the items are somewhere in the total for 1916-17, I take it?

Mr. Peterson.—It would save the Board trouble if you ask me to give the explanation to-morrow.* It is not explained by these figures.

Mr. Ginwala.—General works rose from As. 11 to Rs. 2-4-0.

Mr. Peterson.—That is due to the increase in salaries which rose from Rs. 2,62,000 in 1916-17 to Rs. 5,16,400 in 1921-22. It is due also to the increase in the allowance made to the Managing Agents which rose from Rs. 27,000 to Rs. 58,000. London office increase is due to the increased work put on them in connection with purchases for the Greater Extensions. Then there is the increase in the auditors' fees from Rs. 5,900 to Rs. 12,000; the employment Bureau in Jamshedpur was not established in 1916-17 and there was no expenditure on that account but in 1921-22 there was an expenditure of Rs. 22,400 under that head. Postage and telegraph charges rose from Rs. 25,800 to Rs. 37,600. Further, the percentage allocated to the open hearth furnaces was increased from 17·5 by 35·03 per cent. in 1921-22 by the General Manager.

---

* The explanation is as follows:

Refractories.—

In the year 1916-17 ladle repairs were taken under Relining Fund Account, whereas from 1921-22 they have been charged in Open Hearth Refractories account. In 1921-22 this amounted to 1-50. This change in system accounts for most of the increase.

President—It is double.

Mr. Peterson.—Yes.

Mr. Ginwala.—What is this allocation you are talking of?

Mr. Peterson.—This is the allocation of the proportion in which the general works expenses are distributed between the various producing departments.

Mr. Ginwala.—Do you follow any principle?

Mr. Peterson.—We don't really follow any definite principle—I mean to say, it is not in accordance with any definite scale. We simply take the total cost and allocate a certain percentage to each department which in the opinion of the General Manager it should bear.

Mr. Ginwala.—What was the idea of raising this by 500? It will mean more in ingots.

Mr. Peterson.—It is probably based on the cost above metal.

Mr. Ginwala.—That is on cost above metal.

Mr. Peterson.—So far as I remember, the system was altered and a system was instituted of allocating this in proportion to the cost of above metal.

Mr. Ginwala.—That upsets the previous calculation altogether because it will add 50 per cent. to the item.

Mr. Mather.—It adds 100 per cent. and doubles it.

President.—It only applies to the item "General Works expenses"

Mr. Peterson.—Unless it is stated there the allocation is made in accordance with the amount used as far as it is estimated.

Mr. Ginwala.—The next item is increase of labour from Rs. 4-4-0 to Rs. 6-4-0.

Mr. Peterson.—The explanation is the same as in the other cases.

Mr. Ginwala.—Furnace relining fund—from Rs. 5 to Rs. 7-8-0—a difference of Rs. 2-8-0 per ton.

Mr. Peterson.—That is due to increase in the price of bricks and in the rate of wages paid. Fire bricks rose from Rs. 83-10-0 to Rs. 142-8-0 per thousand. Foreign magnesite bricks from Rs. 1,405 to Rs. 2,320 per thousand, and local magnesite bricks from Rs. 747 to Rs. 1,833 per thousand.

Mr. Ginwala.—That is a very big item—the increase in the local bricks is much higher than in the other.

Mr. Peterson.—That is about 150 per cent. and the other is about 90 per cent.

Mr. Ginwala.—Are these the bricks which you buy from the Kumardhubi Works?

Mr. Peterson.—Yes.

Mr. Mather.—In connection with the charging of things like bricks and stores generally, how do you decide the price at which these articles are to be charged to the departments at a time when prices have fallen? Do you issue them to the departments at the price prevailing at the time when the articles were received?

Mr. Peterson.—On the average price of our stocks on the date of issue. We reduced our valuation of the stocks.

Mr. Ginwala.—Tools, lubricants and supplies rose from Rs. 1-4-0 to Rs. 2-12-0.

Mr. Peterson.—This is due to an increase in the prices of stores, lubricants, etc.

Mr. Ginwala.—I think these are the main increases.

Mr. Peterson.—Increase in the cost of flux—about 15 as.—is due to an increase in wages and the increase in the price of limestone which rose from Rs. 5-14-0 to Rs. 6-7-0.

Mr. Mather.—And a big increase in consumption?

Mr. Peterson.—Yes. It again is due to the falling off in the production of steel per furnace.

Mr. Ginwala.—You use more limestone per ton?

Mr. Peterson.—Yes. Because we are producing less steel per furnace.

Mr. Ginwala.—It is still over 100 per cent.?

Mr. Peterson.—The actual consumption of limestone per ton of ingots is 357 lbs. as against 166 lbs. This is due to the fact that less steel was produced.

President.—Does that imply that you are producing only half the amount of steel which you were producing formerly? Is it that owing to the larger amount of ingots being turned down you are getting a smaller outturn in the open hearth?

Mr. Mather.—They are using more limestone in actually working down one than they did before.

Mr. Ginwala.—That disposes of the open hearth. Coming to the blooming mill, the works cost rose from Rs. 50 to Rs. 83-10-0. There is a difference of Rs. 33-10-0. I see that is chiefly explained by the difference in the net metal cost which rose from Rs. 44-6-0 to Rs. 75-11-0, which is due to the higher cost of ingots.

Mr. Peterson.—The difference in the total cost is Rs. 33-10-0, of which Rs. 31-5-0 is due to increase in net metal cost.

Mr. Ginwala.—With regard to the 28 inch mill, the works cost increased from Rs. 75-2-0 to Rs. 116—a difference of about Rs. 40-14-0.

Mr. Peterson.—A great proportion is also due to the increase in the net metal cost, which rose from Rs. 57 to Rs. 94.

Mr. Ginwala.—There are two principal items of increase in this: one is steam which rose from Rs. 1-6-0 to Rs. 3-2-0—a difference of Rs. 1-12-0—and the General works expenses which rose by Re. 1.

Mr. Peterson.—The explanation is the same as in the case of the open hearth, an increase in the price of coal and in wages.

Mr. Mather.—Has the percentage of the allocation to General works expenses been increased as well?

Mr. Peterson.—Yes. From 12·5 to 15·8.

Mr. Mather.—The allocation should have fallen somewhere?

Mr. Peterson.—It would have fallen on pig and the coke ovens. On pig it has fallen from 27·5 to 18·06.

Mr. Ginwala.—Labour has also increased?

Mr. Peterson.—That is due partly to the increase in wages and because more men were employed in the shipping department to handle more tonnage.

Mr. Mather.—If you got more tonnage that increases your divisor?

Mr. Peterson.—In 1916-17 the whole of our production practically was rails.

Mr. Mather.—Your output figures do not show that conspicuously by comparison with 1921-22.

President.—I take it that the great increase in the credit for scrap is because you are producing more second class rails now?

Mr. Peterson.—It is due to the fact that rails and steel of the quality that were accepted during the war are not being accepted now. It does not mean that the practice has fallen off, but that the market will not take them.

Mr. Ginwala.—I think it is probably due to the change in the system of accounting. Formerly you did not take credit at the market rate, but at scrap value.

Mr. Peterson.—Originally we took the scrap value and then the pig iron cost. At present we take credit as scrap except in the case of actual sales. At that time we credited rejected rails at Rs. 51 a ton and rejected structural materials at Rs. 20 a ton and also billets at Rs. 53. In 1921-22 we credited second class rails, which were sold, at Rs. 84, 90 lbs. second class rails at Rs. 79 and also billets at Rs. 83: other rejected materials we credited at Rs. 20.

Mr. Mather.—It is hardly a change in the system?

Mr. Peterson.—It is merely actual prices realised that are shown in the costs.

Mr. Mather.—The figures for materials per ton and yield are a little surprising. I do not understand them. In 1916-17 the materials per ton figure is 2,851 lbs. and the yield is 78.58 per cent. and in 1921-22 the materials per ton figure is 2,547 lbs. and the yield has been given at 80·31. Whichever figure is correct I cannot understand such a big difference.

President.—If 78·58 is right the corresponding figure for 1921-22 is 87·9.

Mr. Peterson.—We shall give an explanation for that figure.

Mr. Mather.—Are these figures for materials per ton right?

Mr. Peterson.—They are actual figures given in the cost sheets.

Mr. Mather.—May I take it that the bigger yield is due to an increased severity in the specifications?

Mr. Peterson.—I do not know. The figure 78·58 is correct and I do not understand the other figure.

Mr. Mather.—It affects these costs; 88 per cent. is much more like the normal yield which one would expect from the blooming mill.

President.—The tonnage of blooms used in 1921-22 was 135,246 and of rails 96,273 tons. Surely 96 :135 is not 88 per cent. There must be something wrong.

Mr. Peterson.—We shall give an explanation.*

**Explanation.*

28″ Mill Yield.—Method of calculating yield has been changed from 1921.

In 1916-17 the yield was calculated on the total finished steel divided by total consumption of Blooms, as for example :—

Total Blooms consumed in 1916-17	87,634 tons.
Total products	68,859 „

$$\text{Yield} = \frac{68,859}{87,634} \times 100 = 78\cdot58 \text{ per cent.}$$

In 1921-22 the yield has been calculated on the finished products *plus* the Bar Mill Billets rolled on 28″ Mill, *e.g.*

Blooms used in 1921-22		135,246 tons.
Total finished products	96,273 tons.	
Bar Mill Billets .	12,343 „	
		108,621 „

$$\text{Yield} = \frac{108,621 \times 100}{135,246} = 80\cdot31.$$

The method of calculating consumption per ton of products was changed from April 1921. In 1916-17 the consumption per ton was calculated by dividing the blooms used by the total finished steel whereas in 1921-22 it was calculated on the basis of the blooms used being divided by the total finished steel *plus* Bar Mill Billets *plus* second class rails covered by orders.

$$\text{1916-17 Blooms per ton of product } \frac{87,634}{68,859} \times 2,240 = 2,851 \text{ lbs.}$$

1921-22 Blooms used		135,246 tons.
Finished steel Products .	96,273	
Bar Mill Billets . .	12,348	
Second class Rails covered by orders	10,312	
		118,933 „

$$\text{Consumption per ton} = \ . \quad . \ \frac{135,246}{118,933} \times 2,240 = 2,547 \text{ lbs.}$$

If consumption be calculated on the total finished steel and Bar Mill Billets, it would come to 2,789 lbs. = 80·31 per cent. yield.

Mr. Ginwala.—We may take bars. There is an increase in the total cost of Rs. 53-8-0, the difference between Rs. 82 and Rs. 135-8-0. This is mainly accounted for by the cost of the net metal Rs. 55-12-0 and Rs. 95-6-0—a difference of Rs. 40.

Mr. Peterson.—There are other causes. See the explanation given lower down in that letter. The cost above metal increased by Rs. 13-13-0 and the cost of conversion by Rs. 19-12-0.

Mr. Ginwala.—Net metal cost was Rs. 55-12-0 and rose to Rs. 95-6-0—a difference of Rs. 39-10-0.

Mr. Peterson.—The total increase was Rs. 54 in works cost, of which Rs. 40 is accounted for by the increase in the net metal cost.

Mr. Ginwala.—You have got a big increase in Gas Producers—about Rs. 2-14-0.

Mr. Peterson.—That is due to the high cost of coal.

Mr. Ginwala.—Labour has gone up from Rs. 8 to Rs. 13—a difference of Rs. 5. That is a tremendous increase in labour.

Mr. Peterson.—I do not think there was any special increase here. There was no particular reason for increasing the labour charges in the bar mill.

Mr. Ginwala—It is a bigger percentage than your other labour increases?

Mr. Peterson.—It is a little over 50 per cent.

President.—It would be explicable if more work was going to the rail mill and less was going to the bar mill. How the tonnage and yield should be exactly identical in those years I do not understand.

Mr. Peterson.—These are round figures we have given here. The production was not absolutely the same :—

In 1916-17 it was 29,867 tons.

In 1921-22 it was 29,598 tons.

There was very little difference and so we gave a round figure.

Mr. Ginwala.—Why should labour increase by Rs. 5-12 here while in the case of rails it increased only by Re. 1 per ton?

Mr. Peterson.—The actual increase in wages given and the actual concessions amounted to about 52 per cent.

President.—But the concessions would not appear in this part of the accounts?

Mr. Peterson.—Yes. Concessions in the form of leave, etc., that is what I am talking about. I don't think there is a very great discrepancy to be explained there.

President.—It is about as great in the open hearth and it is even greater in the case of pig.

Mr. Peterson.—It might also be due to the alteration in the practice in the bar mill. During the war I don't think we were rolling the same number of smaller sections that we are rolling now.

Mr. Ginwala.—The next item is Steam. It went up from Rs. 1-10-0 to Rs. 4-4-0.

Mr. Peterson.—That is the same explanation again as in other cases—increase in the cost of coal.

Mr. Ginwala.—The next big item is in your general works expenses, from Rs. 1-5-0 to Rs. 3-11-0, a difference of Rs. 2-6-0. Is there any alteration in the allocation?

Mr. Peterson.—It is very slight, 7·5 to 9·3, which accounts for 25 per cent. of the increase. What other reasons there are I do not know.

Mr. Ginwala.—Inspection 0-2-0 to Rs. 1-5-0?

Mr. Peterson.—That is because more tonnage is being inspected.

Mr. Mather.—What is this charge exactly?

Mr. Peterson.—It appears in the cost account as inspection charges.

Mr. Mather.—You have no inspection in the rail mills?

Mr. Peterson.—We have it in the rail mills. We have only extracted the larger items here.

Mr. Mather.—What have you got here?

Mr. Peterson.—On the rail mill. Rs. 21 per ton.

Mr. Mather.—I think that might possibly be accounted for. The structural steel that you actually sell to private firms is inspected by me on your account.

Mr. Peterson.—I shall send you the details.

Mr. Ginwala.—That is done for your satisfaction?

Mr. Peterson.—For the satisfaction of the customers.

Mr. Kale.—What is this "Cost of rails rolled down"?

Mr. Peterson.—There are second class rails rolled down into lighter sections on the bar mill. We treat them as billets and include the 20 inch mill with this at the cost of blooms.

Mr. Ginwala.—I think I asked you to draw up a brief summary bringing it up from pig to rails. I have taken it under 5 different headings in this way—go from raw materials upward to rails and the rails rose from Rs. 75-3-0 to Rs. 116?

Mr. Peterson.—Yes.

Mr. Ginwala.—Under the 5 headings :

(1) Raw materials, in which I have included ore, dolomite and coke, rose from Rs. 12-6-0 to Rs. 25-12-0, an increase of Rs. 13-6-0 or about 108 per cent.

(2) Fuel rose from Rs. 7-6-0 to Rs. 15-9-0, an increase of Rs. 8-3-0 or 111 per cent.

(3) Labour rose from Rs. 13-13-0 to Rs. 18-6-0, an increase of Rs. 4-9-0 or 33 per cent.

(4) General works rose from Rs. 2-13-0 to Rs. 5-9-0, an increase of Rs. 2-12-0 or 100 per cent.

(5) Principal miscellaneous charge rose from Rs. 12-15-0 to Rs. 18-8-0, an increase of Rs. 5-9-0 or 43 per cent.

Have you checked these figures with your works cost under these various headings?

Mr. Peterson.—These have been prepared from the works cost.

Mr. Ginwala.—There has been an increase in the total from Rs. 49-5-0 to Rs. 83-12-0, an increase of Rs. 34-7-0 or an all-round rise of 70 per cent.?

Mr. Peterson.—Yes.

Mr. Ginwala.—It is a funny thing that though there is a general rise of 70 per cent. the rise in the general works cost is 53 per cent.? Is that right?

Mr. Peterson.—Yes.

Mr. Ginwala.—I want to work out your prices at which you ought to be able to sell steel at a reasonable profit on the profit and loss basis for 1921-22. Your total production of steel in that year was 126,000 tons?

Mr. Peterson.—Yes.

Mr. Ginwala.—And the surplus pig for sale was 107,000 tons?

Mr. Peterson.—Yes.

Mr. Ginwala.—That 107,000 is not the normal quantity that you would get if you were only manufacturing steel?

Mr. Peterson.—If we do not manufacture steel to full capacity it would be very much larger. We have two estimates of the quantity of surplus pig that will be available when the Greater Extensions are complete—one is the Consulting Engineer's estimate of over 100,000 and the other the General Manager's estimate of 38,000 tons. We take the latter.

Mr. Ginwala.—If we take 35,000 tons as your normal surplus and 70,000 as extra, will that do?

Mr. Peterson.—That should be accurate.

Mr. Ginwala.—You have worked out these costs according to my instruction: according to that the total comes to Rs. 186·58 lakhs?

Mr. Peterson.—Yes.

Mr. Ginwala.—Rs. 186.58 lakhs as being the cost of 126,000 tons of steel, but it includes your profit on 70,000 tons of pig that is not part of the normal production?

Mr. Peterson.—Yes.

Mr. Ginwala.—So in any adjustment that we make we must add the profit on the 70,000 tons of pig to this figure of 186·58 lakhs?

Mr. Peterson.—Yes.

Mr. Ginwala.—After allowing for depreciation and other things would a profit of Rs. 40 per ton be reasonable?

Mr. Peterson.—Yes.

Mr. Ginwala.—So that 214 lakhs divided by 126,000 would be the price at which you could sell your steel?

Mr. Peterson.—Yes.

Mr. Ginwala.—Item I "Expenditure on total production"—Rs. 204·93. May I take it that that includes all expenditure?

Mr. Peterson.—Yes, that includes everything.

Mr. Ginwala.—With regard to item II—Rs. 117·46, that is actual realization?

Mr. Peterson.—Yes.

President.—In another statement submitted on the 5th November which has been printed you say that you actually sold 96,000 tons as the amount available for sale, whereas in the other statement which you originally put in 107,000 tons is the amount of pig available for sale.

Mr. Peterson.—Probably we said so.

President.—In that case the other statement is quite wrong.

Mr. Peterson.—The difference between the statement sent on the 5th November and the other statement is that in the one we have pig iron available for sale and in the other we have pig iron sold. In the statement of the 5th November we give 107,000 tons as available for sale and 104,000 as the actual sale.

President.—Then is 96,000 tons the quantity you were actually paid for?

Mr. Peterson.—Yes that is what was actually paid for during the year.

President.—Are not then these the figures that ought to go in?

Mr. Peterson.—The figure of 107,000 tons was what was actually supplied and 96,000 tons was what we were actually paid for, during the year. I will, however, have this cleared up to-morrow.

Mr. Ginwala.—If you total up these figures it comes to 87 lakhs.

President.—What you were actually paid for were valued at Rs. 100 a ton. Why did you value it at Rs. 94 a ton?

Mr. Peterson.—The correct figure is Rs. 94. That is the actual average price for this year.

Mr. Ginwala.—Add overhead charges on total produdction:—Depreciation at rates given by me—I gave you all the income-tax rates except in one case where I had made some alteration in the colliery machinery. I allowed you depreciation at 7½ per cent. on the whole machinery, instead of allowing you 10 per cent. on underground and 5 per cent. on overground. Is it not a fair percentage?

Mr. Peterson.—7½ per cent. is reasonable in order to ascertain what depreciation should be added to the cost before arriving at the profit.

Mr. Ginwala.—The other rate is a conventional rate. I take it that you depreciated the plant from the original book value of Rs. 582 lakhs to Rs. 380 lakhs? The depreciation is 202 lakhs.

Mr. Peterson.—Yes.

Mr. Ginwala.—You worked it out, I take it, on this basis. You took the book value of each principal item at the beginning of the year and you depreciated those items at those rates every year up to 1921?

Mr. Peterson.—I am taking depreciation at the same rates.

Mr. Ginwala.—With regard to the output of that year—1921-22: it was produced by the operation of the old plant as well as a portion of the Greater Extensions. I took Rs. 1 crore as the approximate value of the Greater Extensions which contributed to the production of the year. Do you consider that a fair amount?

Mr. Peterson.—That is a fair estimate.

President.—Have you gone into that question?

Mr. Peterson.—I have gone into these various items. One crore will be fairly reasonable.

President.—I want to ask you a question about the depreciation of Rs. 30 lakhs for the original plant. That differs, I think, from Rs. 32 lakhs shewn in the earlier statement?

Mr. Peterson.—That is the only difference.

President.—There is this difficulty as regards the old method of calculating depreciation on the original book value. It includes depreciation on depreciation and it means that your depreciation increases without limit. I must guard myself at this point by suggesting that this method, to my mind, does involve a fallacy that you are charging depreciation on the original book value of what has been purchased from the depreciation fund, and I pointed out to you on our first visit to Jamshedpur that, if you follow that method, your depreciation constantly increases. In one statement you have put the allowance for depreciation when the extensions are complete at Rs. 130 lakhs. In accordance with your principles it will be Rs. 138 lakhs in the second year, Rs. 146 lakhs in the third year, and so.

Mr. Peterson.—It seems to me to be a question of method.

President.—It is much more than that. It is a question of fact.

Mr. Peterson.—The actual result is about the same. You can reckon depreciation in one of three ways.

President.—We went into that before. I think I suggested to you then that it would not do to charge depreciation on what has been purchased from the depreciation fund, because in that case your allowance.

Mr. Peterson.—I don't think that it makes as a matter of fact much difference.

President.—I must guard myself. I hold strong opinions; on that question I do not know that this sum of Rs. 30 lakhs practically makes a great difference to the final result, but there is one other point to consider which was also referred to at a previous meeting—how far you are entitled in the cost of 1921-22 to take full depreciation on your colliery machinery. I don't want to go into that just now, but I don't accept the figure of Rs. 30 lakhs as final.

Mr. Ginwala.—Have you added the depreciation that the plant has undergone?

Mr. Peterson.—Yes.

Mr. Ginwala.—7½ per cent. interest on a working capital of Rs. 217 lakhs—you have taken these figures from your accounts for that year?

Mr. Peterson.—Yes

Mr. Ginwala.—But I suggested that a working capital of Rs. 2 crores would be more than enough for that purpose.

Mr. Peterson.—I don't think that it makes very much difference.

Mr. Ginwala.—It makes some difference.

Mr. Peterson.—We will take Rs. 2 crores as a reasonable figure.

Mr. Ginwala.—Bombay office expenses and Agents' commission—these are actuals I think?

Mr. Peterson.—Yes.

Mr. Ginwala.—Item No. 4 is the capital which is the equivalent of the present value of the plant—old and new—in operation?

Mr. Peterson.—Yes.

Mr. Ginwala.—You claim on ordinary and deferred capital of Rs. 277 lakhs 10 per cent. interest. That includes new ordinary and new deferred capital?

Mr. Peterson.—Yes.

Mr. Ginwala.—Do you consider that a fair return on the ordinary and deferred capital?

Mr. Peterson.—Yes.

Mr. Ginwala.—I think that brings out all the points. With regard to collieries, the President has raised the question as to whether you are entitled to charge depreciation on the whole plant in the collieries.

Mr. Peterson.—In 1921-22 it was Rs. 12 lakhs.

Mr. Ginwala.—The point is this: would it give you much trouble to omit the collieries altogether and work out the total cost of coal to you on the assumption that you had purchased the whole of it from the market?

Mr. Peterson.—You want to know, supposing we had replaced all the coal that was coming from our own collieries and bought the whole lot from outside, what would be the increased or decreased expenditure? It can be done quite easily.

President.—Do you mean the market price or the contract price?

Mr. Peterson.—Of course the contract price.

President.—You could eliminate the colliery expenditure from this total without much difficulty.

Mr. Peterson.—Yes.

Mr. Ginwala.—We have taken the year 1921-22 as being the least abnormal year. I ask you whether any adjustment has been made in order to bring up the cost more or less to what it would be about this time? After all that is important.

Mr. Peterson.—We have given you a full statement showing what the cost will be when the Greater Extensions are complete.

Mr. Ginwala.—There is this intermediate stage. If to-day's costs were taken for the figures of 1921-22 on the plant that was then in operation as being the normal year

Mr. Peterson.—I can only give you a guess. It is difficult to work out.

Mr. Ginwala.—The trouble is this. Last year was so abnormal that we really could not find what your cost of production ought to be, but for purposes of our recommendation we should take the cost of production about the time of our recommendations. 1921-22 may be a fair basis to take as it eliminates abnormal conditions. Would you take that as a reasonable figure of your cost to-day?

Mr. Peterson.—Subject to one factor, *i.e.*, the increase in the price of coal. I would be prepared for purposes of calculation to eliminate all the other factors, but not the price of coal which is very important.

Mr. Ginwala.—What will you put the increase at, if the coal has gone up from Rs. 6 to Rs. 9? Your consumption of coal is roughly 4 tons. So if you multiply by 4 and add it, that would bring you into relation with present day conditions.

Mr. Peterson.—That would be a rough and ready method. That is the only increase that ought to enter into the calculation: others might be ignored.

Mr. Mather.—Are there any important decreases in your cost?

Mr. Peterson.—I cannot think of any in particular, except the decrease resulting from the operation of the new plant.

Mr. Ginwala.—I am taking the old plant and want to bring these costs into relation with the cost of to-day.

Mr. Peterson.—That would be correct provided allowance is made for coal.

Mr. Ginwala.—You have given in one of these letters the estimate of your cost when the Greater Extensions are in operation?

Mr. Peterson.—We have sent in a detailed statement of the works cost, *Mr. Ginwala.*—For purposes of your works cost have you worked out the average price of steel in your Greater Extensions figures?

Mr. Peterson.—We have given the cost for each particular process.

Mr. Ginwala.—Will you give me the average cost of rails?

Mr. Peterson.—Taking the 1921-22 prices of coal and other materials at prices we expect to pay and with the Greater Extensions in full operation, the rails cost on the new 28″ mill would be Rs. 93-11-0 and on the old 28″ mill Rs. 100-14-0, and the average cost per ton on new and old 28″ mills would be Rs. 95-8-6. We have worked this out as carefully as we can.

Mr. Ginwala.—To this we must add the other charges. You take the block as worth Rs. 21 crores. You have taken depreciation on that. But in the statement of the capital that you think ought to earn, you do not take Rs. 21 crores at all. You claim a profit on about Rs. 16 crores.

Mr. Peterson.—I have simply taken the actual capital and the amount payable on it.

Mr. Ginwala.—But though you have charged depreciation on the whole block, you do not ask for any return on the extra capital?

Mr. Peterson.—I have not asked for any return on the capital that has been found from the reserves.

Mr. Ginwala.—Would it not be better for you to write down the value of your block to the value of your capital which you think ought to earn?

Mr. Peterson.—You mean reduced figures for depreciation?

Mr. Ginwala.—Your earning capital comes to Rs. 17 crores on this. Would it not be better for you to write down the value of the block to the value of the earning capital?

Mr. Peterson.—That will reduce the sum that has to be earned.

Mr. Ginwala.—Would it not be more in accordance with the position?

Mr. Peterson.—Depreciation on the block is clearly a question of what you consider to be a reasonable amount for depreciation.

Mr. Ginwala.—It is no good your trying to calculate your depreciation and other things on the value of the block which is far in excess of your capital or its replacement value.

Mr. Peterson.—It may not be in excess of its value.

President.—Of its cost?

Mr. Peterson.—Our capital here is Rs. 17 crores. Probably our block of Rs. 21 crores, if you value it now, would be worth Rs. 19 crores.

Mr. Ginwala.—Would it not be better for you to bring it down to the actual value of the replacement plant and of the capital at present, in these accounts?

Mr. Peterson.—Bring it down in the balance sheet?

Mr. Ginwala.—In this statement here: it does not require any alteration in your capital. It is simply writing down the value of the block to the value of the capital that you say is entitled to earn profit?

Mr. Peterson.—This statement is simply a method of finding out what the Company must earn really. The first thing you have to consider is what is a reasonable figure for depreciation. The next figure is the debenture interest.

Mr. Ginwala.—You are not claiming a return on Rs. 21 crores, but you are claiming a return on the Rs. 17 crores only including the debentures.

Mr. Peterson.—This statement is only an endeavour to ascertain how much money the Company has to earn in order to make a certain profit. The first figure I have to take is what interest has to be paid by the Company on debentures and loans. The second figure I have to take is a reasonable figure for depreciation taking the whole circumstances of the Company into consideration. That does not necessarily bear any relation to share capital.

Mr. Ginwala.—I do not say it does but in this case would it not be simpler? Of course you would have to reduce the amount of depreciation when you write down your cost.

सत्यमेव जयते

Mr. Peterson.—That will bring down the amount to be found. The question is whether Rs. 1 crore or 1·3 crore is the reasonable figure to be allowed on the plant. I would say that the difference between these two figures, when you are calculating what ought to be the cost of steel in future, is not a point on which anyone would express a very definite opinion. Depreciation may vary from 4½ to 7½ per cent. The higher figure allows for obsolescence, risk of accident, risk of strikes and so on. It is a matter of opinion. I personally think that the best method of calculating depreciation is to take your cost value and to set aside a certain amount each year which would extinguish that.

Mr. Ginwala.—But you may be taking too high a figure.

Mr. Peterson.—I am taking the actual cost.

Mr. Ginwala.—The idea is perfectly sound that the total depreciation must be equivalent to the replacement of the plant. That is true. What would it cost to replace at this moment?

Mr. Peterson.—In my own opinion what should be taken is what the plant actually cost. The only way is to take your original cost and write off a sum of money every year.

President.—Mr. Pilcher pointed out that if, as the result of a duty on steel, the cost of replacement of the present factory building will be raised, various manufacturing companies would raise their depreciation rates. Mr. Ginwala is putting to you the converse case. If the cost of replacement is a good deal below the actual cost, is it necessary for you to set aside the same amount for depreciation?

Mr. Peterson.—Mr. Ginwala is asking me my opinion as to what I should do and this is the way in which I would do it.

Mr. Ginwala.—Supposing I bought a thing for Rs. 20 yesterday and to-day its value is Rs. 10.

Mr. Peterson.—I would depreciate on Rs. 20.

Mr. Ginwala.—I know that it can be replaced by Rs. 10, and I will not overcharge.

Mr. Peterson.—Depreciation is a matter of accounts. It is not a question of opinion.

Mr. Ginwala.—But would you be satisfied if the amount for depreciation was reduced to Rs. 1 crore?

Mr. Peterson.—Yes. But I doubt if one crore can fairly be said to cover the risk of obsolescence. New processes may come in and you may have to replace parts of the plant.

Mr. Ginwala.—This gives you 5 per cent. on everything?

Mr. Peterson.—Yes. I think it is fairly reasonable.

Mr. Ginwala.—You have taken 10 per cent. on the ordinary share capital?

Mr. Peterson.—Ordinary share and deferred capital lumped together.

Mr. Ginwala.—With regard to working capital don't you think that Rs. 5 crores is too high?

Mr. Peterson.—I have given you details for that. I cannot myself see how it can be reduced. This is not a guess: I have a statement from the various heads of departments as to what is necessary for the year's consumption. I would like to see it fall, but I doubt whether it will. We have no desire to increase our working capital at all. Rs. 445 lakhs is the minimum figure—the lowest figure I can take with safety.

Mr. Ginwala.—This Agent's commission at 7 per cent. seems rather high.

Mr. Peterson.—That is simply in accordance with the Agency agreement.

President.—If shareholders are making heavy profit in business, that is a question for them and them only. But if the profit is made at the expense of the consumer, then the question arises whether that ought to be allowed.

Mr. Peterson.—The real question that arises is what is the expense of management of that type. As a matter of fact I have figures showing what Agents' commission has been paid in the entire history of the Company, and they are not very high. In spite of the very high profits made during the war, it has amounted to Rs. 3¼ lakhs a year since the start of the Company. For the first three years all the commission was remitted by the Agents and two years ago ⅓ of the commission was again remitted.

President.—If you put in any note on that we shall not waste time by asking any question on this.

Mr. Peterson.—I am handing in a note on Agents' commission. The Agents commission is based on para. 2 of the Agency agreement.

Rate of commission.—The rate is fixed on a sliding scale, depending upon the dividends paid to the ordinary shareholders. The rates are as follows :—

When dividends to ordinary shareholders between 0 per cent. to 8 per cent.—5 per cent. upon the net profits or Rs. 50,000 whichever is greater.

When dividends to ordinary shareholders exceeding 8 per cent. but not exceeding 10 per cent.—7 per cent. upon the net profits.

When dividends to ordinary shareholders exceeding 10 per cent. but not exceeding 12 per cent.—8 per cent. upon the net profits.

When dividends to ordinary shareholders exceeding 12 per cent.—9 per cent. upon the net profits.

Net profits.—The net profits are calculated after deducting all interest and expenses chargeable against Revenue and 3 per cent depreciation on block cost in respect of which depreciation is customary.

Mr. Ginwala.—In interest, do you include debenture interest?

Mr. Peterson.—We have included it up to the present.

President.—As far as I can see, the figure you have given in this statement is for actual dividends.

Mr. Peterson.—That has been calculated strictly in accordance with the agreement.

President.—Only 3 per cent. depreciation is to be allowed, whereas you have put down Rs. 130 lakhs.

Mr. Peterson.—We have taken that into account in calculating the commission. We have assumed that these dividends have been earned and we have calculated Agents' commission on them. It is according to the agreement.

Mr. Ginwala.—The question is not what arrangement is made with the Agents but what is a fair charge?

President.—What is your minimum commission?

Mr. Ginwala.—Rs. 50,000 or 5 per cent.—whichever is greater.

Mr. Ginwala.—There is one other point. You claim a certain percentage of what is due already on the second preference shares. That assumes that your Greater Extensions are in operation?

Mr. Peterson.—It does. It assumes rather that only one year's dividend would remain unpaid.

Mr. Ginwala.—Are you correct?

Mr. Peterson.—I cannot tell you at present. I cannot tell you whether second preference dividends will be paid in June next.

Mr. Ginwala.—Do you consider that Rs. 10 lakhs is a fair charge?

Mr. Peterson.—This is money which has got to be found from the profits. If not, it will appear as a debt against the company in the balance sheet. That is the first charge on profits.

Mr. Ginwala.—May I take it that now you have given your final estimates of works cost on this elaborate basis and that the other figures are practically superseded?

Mr. Peterson.—Yes.

Mr. Ginwala.—Also your third statement on a profit and loss basis will be superseded?

Mr. Peterson.—Yes. This final estimate of costs ought to be more accurate, but you must realise of course that the year for the realisation of these costs is after the Greater Extensions are completed.

President.—Does this average of Rs. 115 agree with the detailed statement?

Mr. Peterson.—It does not.

President.—The average figure is based on a reduction of 10 per cent?

Mr. Peterson.—I have stated that in my note. We have assumed in these new figures a price of coal exactly equal to the price in 1921-22. I cannot say whether it will be realised or not.

President.—If that comes true?

Mr. Peterson.—I hope it will. You asked me to assume that the price of coal would be the same as in 1921-22 and the figures are based on that assumption. I think these figures will probably be almost realised within two years.

Mr. Ginwala.—We have got these overhead charges. If these are added to your works cost, that will give a fairly accurate idea as to the price you have to get—the price at which you can afford to sell at a reasonable profit.

Mr. Peterson.—You mean the price at which the Company can afford to sell and make a profit?

Mr. Ginwala.—That is to say, if we take Rs. 95 as the works cost for rails and add the other charges, will the total represent the price you should get?

Mr. Peterson.—It will take three or four years before it is realised.

Mr. Ginwala.—There is an intermediate stage? In any calculation that we make, we should make a proportionate allowance for the liability that you incur in the meanwhile and should spread it out on a basis of, say, 5 years or ten years.

Mr. Peterson.—I would spread it out for 10.

Mr. Ginwala.—Otherwise it would overburden a particular year?

Mr Peterson.—Yes.

सत्यमेव जयते

Oral evidence of Mr. J. C. K. PETERSON, C.I.E., representing the Tata Iron and Steel Co., Ld., recorded at Jamshedpur on the 21st December 1923.

Mr. Peterson.—I wish to make one point. I was asked yesterday certain questions regarding the Managing Agents, the nature of the work they did for the Company, their commission, etc. One important point was not touched on and that is the very heavy financial burden which our firm, and the Principals of that firm, have carried in the past and still carry on behalf of the Company, and for which they receive nothing beyond the Agents' commission. In the difficult years through which the Company has passed, there have been many occasions when it has been entirely dependent on moneys advanced by our firm from their own resources. This year the Agents' commission was Rs. 50,000 and to-day over 2 crores and 15 lakhs of the loans obtained by the Company are secured by the guarantee of the Firm itself and of its Principals. Without their guarantee the Company could not continue to work. I want to make that point because it is often misunderstood.

President.—The only comment I should like to make is that, if adequate protection is given, that state of affairs would no longer exist?

Mr. Peterson.—No, it will no longer exist. I merely wanted to point out that our Firm is carrying a very heavy financial burden in regard to the Steel Company.

President.—We might take up now the question of the second class rails.

Mr. Peterson.—Do you mean the sale proceeds of the second class rails? They are credited in the cost accounts.

President.—In order to get the cost per ton, the total costs have to be divided by the output but the divisor does not include the second class rails, and they must therefore be treated as bye-products.

Mr. Peterson.—We can do that by adding second class rails here. 11,443 tons is the figure for the second class rails.

President.—The figure we want is the price.

Mr. Peterson.—Rs. 9·55 lakhs.

Mr. Ginwala.—That will have to be deducted from this?

Mr. Peterson.—Yes.

Mr. Ginwala.—The Board wanted a note on the Palmer Railway contracts.

Mr. Peterson.—I have it here. These contracts were negotiated during the year 1917-18 before the conclusion of the War. The negotiations for the Palmer Railway Contracts were practically concluded by May—July 1918 and those with the Railway Board by September 1919. Conditions had altered in the interval and the view of the Steel Company's Board is very clearly expressed in our first letter to Government, dated 8th August 1919. We attach a copy of this and of their reply No. 516/S/18, dated the 16th September 1919.

The point that is to be considered is what was the Steel Company's estimate of cost at which they could sell rails in 1918. During the years 1917-18, 1918-19, the Works cost of steel rails, leaving out of consideration any increase due to re-valuation of stocks, was an average of Rs. 88 per ton. The all-in cost as calculated by our method, which provides for all possible expenditure, was an average of Rs. 124-8-0 per ton.

It is to be remembered that what the Steel Company had to estimate was not the cost at which *they* could make rails, but the cost at which the English rail-makers could make them after the War. If the Steel Company could not ultimately meet that cost it would have to go out of business. We knew that during the War there had been a great increase in the manufacturing capacity in England and much money had been spent in bringing old plants up to date largely with Government assistance. We, therefore, knew that competition after the War would be very severe. We also knew that there had been a large increase in the prices of raw materials and labour in England during the War and the general expectation was that these would drop after the War as has actually been the case in that country. It is the almost invariable custom for all large manufacturers of steel to expect a small profit on their orders for rails. For these reasons we expected a comparatively low price in England after the War, and this has actually been realised, as is shown by the prices at which the Railway Board and other Railways in India purchased rails last year. What we did not foresee, and what we think no one foresaw very clearly, was the industrial boom and the high prices that followed the War in India. If that is not taken into account, our calculations as to the English prices are probably justified by the results and, considering the long period of the contracts, are probably not so very far out if the total price is averaged over the seven years. These, therefore, were the conditions. We knew that we had to meet a very low price from England and that forecast is proved to be correct. Our average costs at the time when the contracts were made were Rs. 88 for Works costs and Rs. 124-8 for all-in costs. This allows Rs. 36 a ton for overhead charges which we then expected to be reduced by the Greater Extensions. At that time we expected the Greater Extensions to be in operation at the latest by the end of 1920 and our Agreement with our Consulting Engineers who were responsible for the construction actually expired in December 1920 and was subsequently renewed. We have already explained the causes that led to the delay in construction. Our Consulting Engineers' estimate of the works cost on rails from the new plant was originally as low as Rs. 56-12-5. This estimate was made in 1916 on the basis of a Works cost of Rs. 78-6-11 in January and February 1916 and a cost of coal of Rs. 4-6-0.

Taking all these circumstances into account we considered that we should be able to manufacture at a cost of Rs. 90, and with an overhead charge of Rs. 30, the total cost of rails to us would have worked out to a cost of Rs. 120, and we also had every reason to suppose that we should do better than this. The contracts were essential to the Steel Company and are still, in spite of the inadequate prices realised in the past, a great asset to-day as they ensure a steady and continually growing market for its rails. It is entirely wide of the point to argue that we should have bargained for a fluctuating price dependent either on the cost of raw materials or on the English prices, as the Railways would not agree to a proposal of that kind. Their attitude is very plain from the letter from the Railway Board who considered this a very liberal offer. It was a question, as all commercial business is, of taking one risk or another and we preferred what we considered the lower risk of fixed prices which ensured a continual market for our products to the risk of leaving the Steel Works in a position of insecurity without forward sales. We did actually make the proposals to the Railway Board and I will read that part of our letter and their reply to it.

" The Steel Company beg that the fixed prices above mentioned should be treated as minimum prices as conforming to the Cost Sheet of the average of 1918-19. If the costs of the Steel Company rise, then it is suggested that the Railway Board and the Steel Company divide the excess, the Steel Company to bear half the burden in order to give it an inducement to introduce economy in costs. The Railway Board to bear half the burden, because most probably the rise in costs would be due to rise in freights, rise in wages, rise in the cost of stocks, rise in the cost of winning raw material and the poorer quality of the coal, in all which the Steel Company cannot introduce improvements however much it may try. These rises should be considered as depreciation money." The reply of the Railway Board is as follows:—

"As the Board regard this offer as a liberal one and are unable to expand further the terms proposed I am to express the hope that it will prove acceptable to your directors. I am to state in conclusion that the Railway Board are unable to accept the conditions outlined in the last two paragraphs of your letter under reply."

I have got a further note showing when orders for the Greater Extensions were placed year by year giving the total value of the orders placed—

	$
1917	46,23,148
1918	20,40,266
1919	33,18,948
1920	70,54,467
1921	29,22,755
1922	9,97,322
1923	3,50,468
TOTAL	213,07,367

Mr. Ginwala.—These are all your imports from the United States?

Mr. Peterson.—Yes. The heaviest year was 1920. 1920 was particularly heavy because we placed a contract for the structural steel. We had originally intended to roll the necessary sections ourselves here. Partly because of the delay and partly because we sold our steel at a very high price, it paid us to buy from America.

Mr. Ginwala.—I wish to know the cost of production of each article when the Greater Extensions are in operation according to your estimate. In 1927 you expect your cost to be as follows:—

Coke . . . . Rs. 12-8 a ton.

Mr. Peterson.—That is assuming the 1921-22 price as the price for coal.

Mr. Ginwala.—

	Per ton. Rs.	A.
Pig iron	31	0
Ingots	58	8
Blooms	69	8
Rails	95	8
Bar Mill	112	0
Plate Mill	120	0

And the others are not comparable at present?

Mr. Peterson.—No.

Mr. Ginwala.—These I take it are the average works cost of the working of the new and the old plants?

Mr. Peterson.—Taken together, yes.

Mr. Ginwala.—We will now take the question of the collieries. We will take 1921-22 and 1922-23 separately for collieries. Your block value of the collieries in 1921-22 was 175·24 lakhs?

Mr. Peterson.—Yes.

Mr. Ginwala.—And machinery was Rs. 111·21 Lacks?

सत्यमेव जयते

Mr. Peterson.—Yes.

Mr. Ginwala.—Buildings—Rs. 19·03 lakhs?

Mr. Peterson.—Yes.

Mr. Ginwala.—Now I ask you to calculate the depreciation on the machinery and buildings. What is the figure of these two? 7½ per cent. on machinery and 5 per cent. on buildings?

Mr. Peterson.—

Rs. 8·44 for machinery.
Rs. ·95 for buildings.

TOTAL Rs. 9·39 lakhs.

Mr. Ginwala.—In that year you raised 417,000 tons?

Mr. Peterson.—Yes.

Mr. Ginwala.—Your average raising cost I work out at Rs. 5-5 a ton. What is it according to your calculation?

Mr. Peterson.—Rs. 5-4-10 per ton excluding overhead charges.

Mr. Ginwala.—I have taken Rs. 5-5. To that, of course, you will have to add the depreciation per ton. Then you purchased in that year 507,000 tons at Rs. 6-10 per ton?

Mr. Peterson.—Yes.

Mr. Ginwala.—And you used in that year 746,000 tons?

Mr. Peterson.—Yes.

Mr. Ginwala.—May I take it that you made good the difference between 746,000 tons and the 507,000 tons that you purchased from your own collieries?

Mr. Peterson.—Yes.

Mr. Ginwala.—That is to say you made up 239,000 tons from your own collieries?

Mr. Peterson.—Some was taken from stock.

Mr. Ginwala.—I am taking your own figures.

Mr. Peterson.—It would be that amount.

Mr. Ginwala.—May we take it that you sold the balance of your raising after having made good the difference?

Mr. Peterson.—That was available for sale.

Mr. Ginwala.—Your realised price in that year was Rs. 8-6-0 per ton. The difference between that price and your raising price is your profit or rather in comparison with the contract rate you made a profit of the difference between Rs. 8-6-0 and Rs. 6-10-0.

Mr. Peterson.—Yes.

Mr. Ginwala.—Now we will do the same for 1922-23. The block value is Rs. 189·41 lakhs, machinery Rs. 124·48 and buildings Rs. 19·84 lakhs. Depreciation on machinery at 7½ per cent. amounts to Rs. 9·3 lakhs and on buildings at 5 per cent. Rs. 1 lakh. In all, it comes to Rs. 10·3 lakhs.

Mr. Peterson.—Yes.

Mr. Ginwala.—This has to be calculated on a raising of 514,000 tons. The raising cost in that year was Rs. 4-13-0. In that year you used about 770,000 tons, of which you purchased about 570,000 at Rs. 8-15-6 or roughly Rs. 9. Therefore you made good that 200,000 tons out of your stocks in that year and you sold 370,000 tons at Rs. 9-3-0 a ton which is the average price I get. I don't know whether that is correct.

Mr. Peterson.—It is Rs. 9·18. We have actually sold 90,000 tons and not 370,000. The balance was in stock and available for sale.

Mr. Ginwala.—In that year by the contracts you were worse off by several lakhs when compared to your own price.

Mr. Peterson.—Yes.

Mr. Ginwala.—If you had used your own coal of 570,000 tons, you would have made a profit. You purchased 570,000 tons from outside at Rs. 9 whereas from your own collieries you could have got it at a much lower price.

Mr. Peterson.—Do you want to assume that the whole coal has come from our own collieries and see how that differs from the other figures?

Mr. Ginwala.—Yes. I take it that the surplus available for sale includes the amount of coal used at the collieries.

Mr. Peterson.—Consumption will be included in raisings. In the case of the big collieries, it is a very small percentage, whereas in the case of small collieries, it is sometimes a fairly large percentage.

Mr. Ginwala.—In your case what would be an all round reasonable figure?

Mr. Peterson.—I should not like to trust my memory. It would not make very much difference.

President.—Supposing it was 10 per cent. of the coal raised?

Mr. Peterson.—It was 16·5 per cent. last year.

Mr. Ginwala.—We asked for a statement about the prices of rails, beams and bars, and you sent it to us with your letter of 26th November 1923. On the 30th April 1914, the prices of rails, beams and bars were £6-13-6, £6-4-6 and £8-1-6 respectively. You have not got any intermediate price for the years 1914 to 1918, but you have given the controlled prices according to your information.

Mr. Peterson.—So far as we know them.

Mr. Ginwala.—So far as you know between 1914-1918 the controlled price was Rs. 194-12-8.

Mr. Peterson.—Yes, but that price was for 1918.

Mr. Ginwala.—We will take 1919 now. The average prices of rails, beams and bars were £18-13-0, £20-0-8 and £21-17-1 respectively.

Mr. Peterson.—Yes.

Mr. Ginwala.—The average prices of rails, beams and bars in 1920 were £25-8-0, £30-2-5 and £32-8-4 respectively.

Mr. Peterson.—Yes.

Mr. Ginwala.—In 1921, the average prices of rails, beams and bars were £16-15-0, £17-13-0 and £18-2-1.

Mr. Peterson.—Yes.

सत्यमेव जयते

Mr. Ginwala.—In 1922, the average prices of rails, beams and bars were £9-15-7, £10-11-6 and £10-15-0.

Mr. Peterson.—Yes.

Mr. Ginwala.—There is a big fluctuation there and I want to go into that. In October 1922, the prices of rails, beams and bars were £9-2-6, £10-0-0 and £10-0-0. You have also given figures for 1923. The average prices of rails, beams and bars were £10-14-8, £10-16-2 and £11-1-7.

Mr. Peterson.—Yes.

Mr. Ginwala.—In October 1923, the prices of rails, beams and bars were £9-12-0, £10-1-6 and £10-7-0.

Mr. Peterson.—Yes.

Mr. Ginwala.—These are actual quotations obtained from your office.

Mr. Peterson.—Yes, from our London Office.

Mr. Ginwala.—Are these the quotations on which you actually did business?

Mr. Peterson.—Yes.

Mr. Ginwala.—These are sellers' quotations.

Mr. Peterson.—Yes.

Mr. Ginwala.—Sometimes, there may be a obtained

8. As regards the profits yielded by the industry in the past, we attach statement showing to date the total net profits made by our Company year by year and the distribution of these between dividends, depreciation and reserves. The amount set aside for depreciation and reserves works out to 42·6 per cent. per annum of the net profits over the whole period or 7·4 per cent. per annum on the total value of the machinery in operation from time to time, and this is not an unreasonable figure when the great wear and tear on our plant, resulting from the high pressure put upon it during the war by the demands of Government, is taken into consideration. The whole of the sum so set aside has been reinvested in the business and our plant is in consequence as good as new. In the steel industry very large reserves are necessary, as at any moment fresh discoveries and improved practice may render large and expensive plant out of date. We may give an instance of this; our drug ovens were specially constructed at a cost of Rs. 7,46,879 in the latter part of 1918 in order to meet the Government urgent demands for pig iron for war purposes. These have now been replaced by new ovens of a more economical type, and the major portion of that sum has now been written off within 3¾ years. Excluding the amounts written off for depreciation and reserve, the amount actually paid in dividends from the profits has amounted to 8·78 per cent. per annum on the whole capital invested over a period of 15 years. It cannot be said that, considering the large profits made by other industries, this amount shews any sign of undue greed on the part of the Steel Company's shareholders.

9. It remains for Government to examine the position from the general economic point of view, and to do so it must weigh up the advantages to the country and the losses that it would have to bear, if the protection we ask for is granted. In considering the economic gain to the country all direct or indirect contributions to its prosperity by the Steel Company should be taken into account. Such considerations are frequently lost sight of, and we, therefore, desire to state them. The Steel Company at present gives employment to approximately 40,000 men on its own pay roll and pays in wages more than one crore of rupees a year. In the past year it has paid in dividends and interest nearly Rs. 70 lakhs. If Government allows the steel industry to be ruined by the unfair competition to which we have referred and relies on foreign steel, the whole of that money will be lost to the country. In addition, in the year 1920-21 the Steel Company paid the following amounts either directly or indirectly to the Government:—

	Rs.
Income-tax and Super-tax	10,84,000
Income-tax and Super-tax (Supplementary) .	63,000
Income-tax paid by employees	1,14,000
Post and Telegraph expenditure	36,000
Indirect taxation, customs duty, cesses, etc. .	7,16,000
Railway freight on ingoing and outgoing material	31,23,000

or a total of over fifty lakhs of rupees annually. The total economic gain to India from the existence of the industry may be taken at Rs. 2 crores a year. In addition, we are at present supplying about 34,000 tons of rails to the Palmer Railways (Company Railways) at grossly inadequate prices owing to contracts which they have refused to revise. The Government of India, after careful examination so recently as June 1922, fixed the price at which rails of similar specification could be imported into India at Rs. 156, and allowed us this as a revised price. Our average price to the Palmer Railways is Rs. 122-8-0 a ton, and there is, therefore, a saving to India in the present year of Rs. 11,39,000. We are also supplying 15,000 tons of rails to the Bengal Nagpur Railway at an even lower price, *viz.*, Rs. 110. There is, therefore, a further saving here of Rs. 6,90,000. The total economic gain to India in terms of actual money alone may, therefore, be fairly estimated at over two crores of rupees a year even in a year such as the present.

Mr. Peterson.—There is a reduction. What actually happens is when we get these quotations from our London Office, we pass them on to our customers. Our customers either accept or write back and say "we can actually buy at a lower price" and send us an invoice to prove it. Usually there will be a difference of about six or seven shillings and we arrive at a compromise. Either we accept theirs or they accept ours. But this is the evidence we use on our side.

Mr. Ginwala.—That is the seller's price which is subject to reduction.

Mr. Peterson.—Yes, it would be subject to reduction for a big quantity.

President.—The value of these figures is largely comparative.

Mr. Peterson.—Yes, but they would be fairly accurate.

President.—Take the case of rails.

Mr. Peterson.—Rails are different. It was a fixed price practically.

Mr. Mather.—These are c.i.f. prices?

Mr. Peterson.—Yes.

Mr. Ginwala.—To which we will have to add landing and other charges.

Mr. Peterson.—Yes.

President.—There are one or two things in connection with the coal figures which I should like to ask you about. The letter which you sent on the 12th December contains a statement showing the average cost to the Steel Company f.o.r. coal mine, per ton of coal. Is the f.o.r. cost the same as the raising cost, or does the f.o.r. include something that is not included in the raising cost? I put this question because the figures are quite different. In the statement showing the actual average cost per ton of raising coal, you give the cost at Jamadoba and Sijua as Rs. 4-7-8 and Rs. 4-14-4, whereas in the statement of average cost of the Company's coal (f.o.r. colliery) you give the price of coking coal as Rs. 5-7-10, steam coal as Rs. 5-4-5 and gas coal as Rs. 7-2-0 for 1922-23. It is not desirable that these differences should appear without some explanation.

Mr. Peterson.—One statement shows the average cost of raising coal excluding overhead charges, and the other shows the cost of coal loaded including overhead charges.

President.—I would suggest to you that it is doubtful whether that explanation meets the case. If you are adding the overhead charges, the difference ought to be greater.

Mr. Peterson.—Not depreciation but actual overhead charges.

President.—What I am really trying to get at is what do you charge yourself in your works accounts for the coal that comes out of your collieries? Are we to take the raising cost *plus* freight or f.o.r. price *plus* freight?

Mr. Peterson.—Actual raising cost *plus* freight *plus* two annas in addition. The difficulty is this. One statement refers to the cost and the other refers to the price.

Mr. Mather.—Is it possible that part of this is accounted for by the consumption of coal in the collieries?

President.—Mr. Tutwiler told us last August all that you charged yourself for your own coal was the actual cost of raising *plus* freight.

Mr. Peterson.—*Plus* two annas a ton.

President.—I asked that question specially and there was nothing said about two annas. Mr. Mather's suggestion is worth considering. It is possible that the raising cost is calculated on the total raisings, and the f.o.r. price is calculated after deducting the coal used in the colliery itself.

Mr. Peterson.—That would also include the cost of loading.

President.—That may be the explanation. It leaves us rather with two sets of figures which do not in any way agree.

Mr. Peterson.—The best method of ascertaining what is actually charged to the works is the figure in the works cost, and so far as the works cost is concerned you want to relate that to the actual cost of raising and ascertain what is included in it?

President.—I want to know how the two sets of figures are related.

Mr. Peterson.—The actual excess charged over the expenses is two annas per ton.

President.—Even that, of course, it is well to know, but it does not go far.

Mr. Peterson.—The only way to get that, I am afraid, will be a fresh statement from the collieries showing the relation between f.o.r. prices and the cost of raising coal which would show exactly what is included. Probably it would include the cost of loading and the cost of management, that is Managing Agents' commission and the consumption of coal at the collieries themselves.

Mr. Ginwala.—Agents' commission and everything is included in your cost. You will have to add all these charges after you have raised the coal and trucked it.

Mr. Peterson.—I am afraid that that is not the full commission. I think that only the minimum is shewn here. The full commission cannot be decided till the end of the year.

President.—If you take the statement showing the actual average cost per ton of raising coal, the raising cost of Jamadoba coal is Rs. 4-7 and that of Sijua is Rs. 4-14. Something between the two will be the average raising cost of your coal. But in the statement showing the average prices paid by the Company f.o.r. collieries, the price of steam coal is given as Rs. 5-4 and gas coal as Rs. 7-2.

Mr. Ginwala.—I took the average of Rs. 4·75 as the raising cost.

Mr. Peterson.—We were asked to give the average cost excluding the overhead charges.

Mr. Ginwala.—I worked it out for every colliery. I took the total output and the total raising cost and arrived at the figure Rs. 4·75.

President.—Take the 1922-23 figures: Rs. 5-7-0, Rs. 5-4-0 and Rs. 7-2-0. The average of these is a little bit higher.

Mr. Peterson.—One statement includes the overhead charges and the other does not include the overhead charges.

President.—What are the overhead charges?

Mr. Peterson.—I am taking the colliery costs and there are many items here that would come under overhead, for instance, subscription paid to Association, income-tax, cess, Calcutta Agents' commission on sales and so on. Probably all these items have been excluded because we were asked to exclude overhead charges.

Mr. Ginwala.—We did not know then that the collieries were run as a completely separate business.

Mr. Peterson.—I can send you a statement showing the relation between the two.

Mr. Mather.—Also with a definite statement showing exactly the price charged to the works? I think the prices actually charged to the works are these f.o.r. prices *plus* freight.

President.—It is very important to know that.

Mr. Peterson.—I should imagine so but before I say that I should like to calculate further and just see if it is correct.

Mr. Ginwala.—In your coke works cost you charged for coal at Rs. 8 in 1921-22, that is, f.o.r. Rs. 6·9 *plus* 1·5 freight and 2 annas for freight at this end.

Mr. Peterson.—These raising costs are not important unless you want to examine how the colleries are managed.

President.—We do not want details for the collieries, but really it would be better to remove this statement and let us have the price which you actually charge.

Mr. Peterson.—You want the prices charged to the works, not the cost of raising.

President.—It is practically all the costs which you charge to the works in connection with the production of coal apart from what goes into your own overhead.

Mr. Ginwala.—I have taken the lower figure Rs. 5-5 instead of Rs. 6. You may make consequential alterations in the statement.

Mr. Peterson.—Yes.

President.—If we can have a consolidated statement instead of the statement showing the raising cost excluding overhead charges that will do. What we want for our purpose is not details of separate collieries, but the total for all your collieries.

Mr. Peterson.—You want the total including everything and if you add freight to it that would give the total average cost at the works.

NOTE.—We have now submitted a general statement showing cost of raising, including overhead charges. This gives Rs. 4-14-2·89 for Jamadoba. This gives a cost (adding annas 2 per ton) of Rs. 5-0-2·89 for Jamadoba, f.o.r., which agrees with the figure upon which the statement showing the average price paid f.o.r. Colliery per ton is based. The difference between the figures mentioned in the President's question on page (5) is therefore due, as stated in the evidence, to the fact that the one statement excludes overhead charges and the other includes them. The actual cost as charged to the Works including all overhead charges, except interest and depreciation, is that shown in the statement of the 8th December sent with our letter of the 12th.

President.—Please look now at the first statement attached to your letter, dated the 13th/14th December headed "statement showing particulars regarding collieries." If you will look at the column in the right hand bottom corner showing the total output in different collieries, in 1918-19 the output for nine months was 448,000 tons which is nearly equivalent to 600,000 tons a year, whereas in 1922-23 the output was just over half a million tons. During the intervening years the Company had installed a good deal of machinery, and the reason why the output instead of increasing should show a tendency to decline ought to be on record.

Mr. Peterson.—That is due to the fact that, though we are spending a good deal of money on development, we have not got to the stage of raising more coal. We will get to that in three months. We expected to do so earlier but owing to the delay in the supply of machinery from America the supply of that coal will not be ready for the next three months.

President.—I take it also that there is something to be allowed for the decline in the outturn of the Bhelatand colliery. On the other hand there has been increased production from Purushottampur.

Mr. Peterson.—I am not sure but I think it is the colliery which we hold for a certain period.

President.—As it is, Bhelatand is a wasting asset.

Mr. Peterson.—Yes.

President.—Another point is that this drop in the outturn is not peculiar to your collieries, but it is common to all collieries.

Mr. Peterson.—It is for that reason that we are electrifying our collieries. The labour trouble has handicapped all collieries enormously. We are trying to introduce electrical coal cutting machinery and thus to do away with manual labour as far as possible.

President.—That labour trouble will I suppose explain the drop in the output from 1920. It fell from 556,000 tons to 371,000 tons.

Mr. Peterson.—The actual posion so far as we are concerned is that, in spite of a great deal of money spent on development, we are not now getting a higher outturn than we got six or seven years ago.

President.—You are getting a lower outturn?

Mr. Peterson.—We expect to alter that within the next year when the effect of this large expenditure on development begins to be felt. We asked the managing agents for an explanation three months ago and that is the explanation we got, that development was just on the point of beginning to show results but has not reached that point yet.

President.—That practically means that a good deal of money that is going into the mine has not begun to earn yet?

Mr. Peterson.—Yes.

President.—You have got another set of figures for the production of coal which is in the annual report to the shareholders. I cannot make that agree with what you have put here. Was it the quantity of coal produced from your own collieries, or was it the quantity from your own collieries that reached the works during the year?

Mr. Peterson.—That would be the quantity actually delivered at the works from the collieries.

President.—If it is that I can understand the difference.

Mr. Peterson.—The heading is raw materials drawn from the collieries, *i.e.*, brought to the works.

President.—It would not agree with the actual consumption in that year. You have promised to let us have figures for the coal used in your own collieries.

Mr. Peterson.—Yes. I shall send that in. You want it for the same particular years 1916-17 and 1922-23.

President.—I think so. If, in the same way as Mr. Ginwala has been calculating the fair price to be charged for your finished products, the endeavour were made to ascertain the fair price for coal produced at the Company's collieries, allowance would have to be made for interest on your working capital. In the case of the collieries that might be a considerable amount, in view of the large stocks you are carrying at the collieries.

Mr. Peterson.—Yes.

President.—At any rate it would be necessary to make some allowance for that.

Mr. Peterson.—Yes.

President.—Possibly those figures which you gave us of the stores and stock of coal at the collieries in connection with the question of working capital might serve as a guide.

Mr. Peterson.—The figure for the collieries is Rs. 35 lakhs and that included everything, stocks, stores and outstandings.

President.—Is that a reasonable basis to take as the working capital required for the collieries?

Mr. Peterson.—Rs. 35 lakhs when the Greater Extensions are complete. At present we hold about Rs. 17 lakhs worth of coal, I think.

President.—There is a corresponding figure of Rs. 25 lakhs, and this will be somewhere near the figure which would give the measure of working capital required?

Mr. Peterson.—Yes.

President.—In the case of collieries it would not be necessary to take anything on account of Bombay charges, Agents' commission.

Mr. Peterson.—You will have to make allowance for interest on money borrowed.

President.—That would be working capital.

Mr. Peterson.—I do not think we need make not other allowance.

President.—If you will look now at the tables for the Greater Extensions which followed the colliery statements—statement showing the depreciated value of the fixed capital expenditure, I think it would be desirable if it could be brought up to 1922-23 and approximately up to the end of the year 1923-24. It is important to know how your fixed capital expenditure will stand on the 1st April next according to this method.

Mr. Peterson.- We could do that. You simply want two additional columns added.

President.—This is for the Greater Extensions. I do not want to ask for a statement in this connection because as you said yesterday the question of the proper rate of depreciation on the portion of the Greater Extension already operating is a matter of opinion because you cannot say to what extent it was operating, and you told Mr. Ginwala that Rs. 5 lakhs was a reasonable figure. For 1922-23 and 1923-24 would it be necessary to allow higher figures?

Mr. Peterson. -You will have to increase it.

President.--What I am thinking of is that you must make a certain allowance in the fixed capital expenditure, as it stands on the 31st March next, for depreciation which ought to have come off the Greater Extensions. How would you calculate it?

Mr. Peterson.—It is very difficult to say because, for instance, the new blast furnace has been working for a full year. We would probably take a full year's depreciation on that. The plate mill has not been on full production and depreciation on that would be considerably smaller. It would be extremely difficult to work that out.

President.--I do not regard that as of sufficient importance. What I am getting at is the extent to which the fixed capital expenditure on the Greater Extensions ought to be treated (in accordance with this method) as having depreciated up to the 1st April next. If it is possible to give a rough estimate that would be quite sufficient.

Mr. Peterson.—That can be done by taking the full amount in the blast furnace and a quarter of the rest.

President.—I do not know what the figure would amount to: I do not want any minute calculation.

Mr. Peterson.- I shall give you a figure. (Statement submitted with letter of the 28th December.)

President.—There is another very small point in the statement we were examining at the beginning of to-day's meeting, *i.e.*, the statement showing cost of production on the basis of 1921-22 prices. In one particular case the cost per ton of sulphur is put as Rs. 192-12-0. It is of no importance in itself. Is there any other item in which the 1921-22 prices will be rather badly out?

Mr. Peterson.—In this statement we took 1921-22 prices for coal and we took for other materials the prices which we expect to pay.

Mr. Mather.—It is the cost of sulphur, not of sulphuric acid?

Mr. Peterson.—This is the cost of sulphur. I don't think there is any reason why we should anticipate a rise in the price of sulphur. We should rather anticipate a drop. Rs. 170 is our present price -31st March 1923.

Mr. Mather.--The Acid manufacturers have been complaining to us that the tariff valuation of Rs. 120 was too high and was a hardship to them.

Mr. Peterson.- This is our average for the whole year. It was pretty high at the beginning of the year.

Mr. Mather.—The tariff valuation which was worked out in December 1922 was Rs. 120.

Mr. Peterson.—I think they have taken only the price of sulphur in 1922. This figure of Rs. 192-12-0 was the figure actually paid in 1921-22.

President.—If it was the price paid in 1921-22 only I have nothing to say.

Mr. Peterson.—The other things are all more or less rates at which the materials will be bought in the open market.

President.—At one of the previous meetings we asked for the average price for all steel products in certain years. You have given us the average price for rail mill and bar mill products divided into "Ordinary Sale" and "Contract Sale." What we wanted was that you should give us the average price for the whole lot?

Mr. Peterson.—It is simply worked out on the basis of output.

Mr. Ginwala.—I suppose you take fishplates with rails or do they go as structurals?

Mr. Peterson.—They are actually made on the Bar Mill.

President.—I asked for an average giving for each of these four years for which you have given them separately—rails, structural, fishplates, ordinary sale and contract sale, to give us your average for all steel products.

Mr. Ginwala.—You cannot get this by so simple a method. You have contract sales and ordinary sales, so the output will not help you.

Mr. Peterson.—We have got to average out the prices at which we sold each product. I don't think that is of much value to you. We always take the average price of the structural steel as the average price of steel. We adopt joist as the base price.

President.—That is not what I want. It is important to ascertain what you received on the average for each ton of steel.

Mr. Peterson.—It has been worked out. (Statement submitted with letter of 19th December.)

Statement showing average selling price per ton of finished steel during the period given below (this covers all steel):—

Period.	28″ Mill Rate.			Bar Mill Rate.			Average rate of finished steel of 28″ Mills and Bar Mills.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
July 1912 to June 1913 .	...			...			108	1	0
„ 1913 to „ 1914 .	...			...			104	14	9
April 1919 to March 1920 .	175	7	9	257	13	4	197	3	6
„ 1920 to „ 1921 .	181	13	6	309	4	4	212	9	0
„ 1921 to „ 1922 .	149	14	0	224	8	10	159	0	0
„ 1922 to „ 1923 .	135	12	5	162	13	10	142	9	0

President.—I want the average for the whole of the steel that you make.

Mr. Peterson.—You want a column added here giving the average price for all steel, both mills together?

President.—Yes. About the cost of production when the Greater Extensions are operating, after the new and old Rail Mills the next statement is 24″ Mill and the 18″ Mills. What precisely are these mills. Have they got any other name?

Mr. Mather.—This is the continuous Sheet-bar and Billet Mill.

President.—Then there is another statement we asked for as to the approximate date when you would begin to produce the various productions that you contemplated on the completion of the Greater Extensions.

Mr. Peterson.—You wanted a flow sheet prepared for two years.

President.—The point I want to know is on what date will you begin to produce the various products? The flow sheet was for the amount you expected to produce: what I want is the date when you will actually start to produce them.

Mr. Peterson.—At present we are preparing a statement, which Mr. Ginwala asked for showing the production that we estimate to get for 1923-24, 1924-25 and 1925-26.

President.—In that case if you will enter in the case of each product when it is going to start, that will serve my purpose.

Mr. Peterson.—You want the month in which each particular department starts working? We will give you an additional column. (Statement submitted with letter of 27th December.)

President.—I see from the flow sheet that you do not expect to operate the Sheet Mill until September?

Mr. Peterson.—That is because we do not want to bring out the crew at the beginning of the hot weather as the experience of the Tinplate Company was not very encouraging. We want to start after the worst of the hot weather is over.

Mr. Mather.—They got their men in October.

Mr. Peterson.—We don't want to give the men a more trying time than they did.

President.—We may take it that you won't be producing sheets at all till the end of September. The question at once arises to what extent it is fair, supposing that protection were given in the form of a protective duty, to give protection before the work came into operation? You run the risk if it is not done that there may be heavy importations.

Mr. Peterson.—I admit that.

President.—There is also this to be said. We have not got the same kind of information about sheets as we have about everything else. Then take the case of sheet bars. You are at present making them on the Plate Mill. The latest figure you gave us for one month was that your cost was Rs. 143 a ton, whereas in the estimate of what you expect in the Greater Extensions turning out on the continuous Mill it is Rs. 81 per ton. I take it that the attainment of that cost of production naturally depends on the full production you expect on the full capacity of that mill.

Mr. Peterson.—It depends on the full production of the whole plant, coke, pig iron and steel.

President.—Quite so. It depends on your being able to work your plant to the full capacity. You have told us that you hope to be able to do that?

Mr. Peterson.—Yes.

Mr. Kale.—How does the Company stand with reference to the supply of coal, that is to say, will it be able to supply all the coal it needs or will it have to buy from outside?

Mr. Peterson.—We have already bought from outside and of course we must obviously take the coal we have already bought.

Mr. Kale.—What will be the Company's policy: will it continue to buy some coal from outside?

Mr. Peterson.—It must continue to take the coal paid for in their 1922 orders. In any case that would be a sound policy.

Mr. Mather.—You talk about the transport difficulties. Can you explain these?

Mr. Peterson.—It is the question of crossing stations. Our own collieries are on a different system from the collieries from which we have bought coal, and it was the question of getting the coal across from the E. I. Railway to the B. N. Railway, that hit us at the time of the E. I. Railway strike. The greatest difficulty in transport is at the crossing stations and not on the B. N. Railway. The yards are not big enough. As a matter of fact in the last year when this difficulty about transport existed, we were actually sending our coal *viâ* Gomoh. We were sending as many as 50 wagons a day.

Mr. Kale.—Do you think that the disaster in Japan has affected your position in regard to the sale of pig iron?

Mr. Peterson.—No. Our Japanese buyers are willing to take pig and have undertaken to take it within a certain period. But they could not get freight. That was due I fancy to the greater portion of the ships being sent to America and other places for the supply of materials to Japan to repair the ravages of the earthquake and for the supply of food-stuff.

Mr. Kale.—That is a temporary difficulty.

Mr. Peterson.—Yes. We have now an accumulation of pig iron to the extent of about 50,000 tons.

Mr. Kale.—You will have no difficulty in disposing of your pig?

Mr. Peterson.—It is already sold. Of that 50,000 tons 30,000 tons will be taken against the execution of a contract which is two years old.

Mr. Kale.—That is overdue?

Mr. Peterson.—Yes. We have, as a matter of fact, very little additional pig to sell in future.

Mr. Kale.—On this flow sheet you have got pig iron for sale 109,000 tons.

Mr. Peterson.—Most of that has been sold. Over 60,000 tons have already been sold under contract to Japan and 36,000 tons additional is on offer.

Mr. Kale.—You must have considered carefully the criticism which has been passed in course of the evidence recorded by us of the proposal of an additional import duty. Originally you suggested a combination of import duty and bounty. Have you got anything to say now in view of the criticisms that have been put before us against your proposal?

Mr. Peterson.—I don't think the Company would be prepared to alter its view that duty was preferable to bounty.

Mr. Kale.—You are not in favour of the combination of the two systems?

Mr. Peterson.—No.

President.—In that again have you taken into account the fact that in the case of bounties you would derive some benefit even in the case of the unfavourable contracts that have been made?

Mr. Peterson.—I don't think we have ever considered that point specifically.

Mr. Ginwala.—Is it worth your while considering that?

Mr. Peterson.—It would be impossible to consider unless one knows what the bounty is to be. Assuming that the bounty was Rs. 10 per ton for purposes of calculation, it would make a difference on these 30,000 tons of three lakhs of rupees straightaway. So much has been said about the disastrous effect of any increase in freights on other industries and the effect of these long term contract at extremely unfavourable prices out of which we cannot get. This method really means increasing the price of rails: that is what it really comes to. Government are 90 per cent. owners of these Railways and it would be open to them to say "Very well, we will pay from our share of the profits a sum equivalent to 19/20th of the increase granted by the State Railways. If they are going to do that, I think it would be simpler for them to do it straightaway rather than in the shape of a bounty which complicates the whole question. On a question of principle I do not see that this question really arises.

President.—All that we have done is to ask you whether the Company has considered that point and it is for you to tell us.

Mr. Peterson.—You have to remember that we based our case on the interests of the country, and not on the interestedof the Company. I want to make that distinction. If the bounty were substantial and were to apply to the rails, obviously it is to the advantage of the Company. Protection will not lead to an increase in the rails price and a bounty would. Obviously the second alternative is to the advantage of the Company if other things are equal. But the price under the contracts can be raised to a fair price without any question of a bounty. It is not a bounty at all. It is a revision of an unfair contract.

President.—From that point of view how do you regard that possibility?

Mr Peterson.—From that point of view we are afraid of a bounty because it will depend on the grant of money every year and we think it is extremely difficult to find money for a bounty.

Mr. Ginwala.—Yes, but then your contracts expire in 1926 except the Railway Board contract?

Mr. Peterson.—That expires in March 1926. The real objection to the bounty is that although it may be put on this year, next year they may find it extremely difficult to balance the budget and they may not grant it, whereas in the case of a protective duty, if once imposed, it does not actually enter into the Government's budget.

Mr. Ginwala.—Assuming that the principle of protection is accepted Government may give it whether by way of tariff or by any other way. You don't suppose that in that case they would depart from that principle. Supposing the country says this industry must get protection and on that principle you invest in the industry, do you think the country will go back on that principle? It may give effect to it by means of a bounty or an import duty—but you must assume that it is going to stick to the principle.

President.—I take it that your view is that in the case of the tariff duty the interests of the Finance Department are on your side whereas in the case of the bounty they would be against you.

Mr. Peterson.—That is it precisely.

President.—As regards the question of bounties: there is this to be said that, in so far as protection is given in the form of bounties, it does not have direct consequential effects on any other industry.

Mr. Peterson.—No.

President.—I think that that is a point to which importance must be paid. There is this again to be said that the market in India is not very elastic. In so far as the tariff duty gives you protection, it operates to increase the price at which your products are sold, and therefore it might have the effect of restricting your market.

Mr. Peterson.—There is that danger.

President.—That is of some importance. There is one other thing where I am not quite sure I followed you. Did I understand what you said correctly that, in proposing 33⅓ per cent., you have taken into account what you are likely to lose on the unfavourable contracts?

Mr. Peterson.—No. I don't think that we did that strictly. We were simply considering what the base price of steel would ultimately be in this country and what our own costs would be and how we and others were going to meet it. We did not take into account the loss on unfavourable contracts.

Mr. Kale.—Do you think that there will be a sufficient market for your output when your Greater Extensions are completed in Northern India for instance because your market in Southern India is restricted very largely? Do you think that you will find a sufficient market?

Mr. Peterson.—We expect to.

Mr. Kale.—We were told in the course of evidence that there was not sufficient scope for all your output in Northern India especially when prices would be increased on account of the protective duty.

Mr. Peterson.—That is not our opinion. Our opinion is that there is quite a sufficient market to take the whole production of our works.

Mr. Kale.—You will have no difficulty in disposing of whatever you produce?

Mr. Peterson.—We think not.

Mr. Kale.—Even in spite of the increased price?

Mr. Peterson.—We don't think so.

Mr. Ginwala.—We asked for a statement as to what the cost of raising coal would be when the collieries were developed and what additional expenditure you would have to incur in the meanwhile.

Mr. Peterson.—Is it not stated in the statement showing the development of the collieries?

Mr. Ginwala.—The average raising cost comes to Rs. 3-12-0 per ton. When will that be?

Mr. Peterson.—That will be very much a matter when we can find the additional money required. If we could find the money now, I should say that it would be within two years.

Mr. Ginwala.—You expect this development within two years after you have spent this additional money.

Mr. Peterson.—Yes. We propose to provide for the additional finance by a charge on raisings which will yield more than the capital expenditure required.

Mr. Ginwala.—This additional expenditure of Rs. 50 lakhs has to be added to the block value.

Mr. Peterson.—Eventually.

Mr. Ginwala.—Rs. 3-12-0 is a very small figure. That is why I am asking you.

Mr. Peterson.—A great deal of the scheme of colliery development could be completed in two or three years if money were available. To complete the scheme entirely will take about seven years. It is being delayed because we cannot find the money.

Mr. Ginwala.—Your raising will then amount to 2 million tons a year.

Mr. Peterson.—Yes.

Mr. Ginwala.—The nearest date that you can give us is three years after you are able to finance your additional capital.

Mr. Peterson.—This can be financed now. You will get most of this development completed in three years.

Mr. Ginwala.—You will get 2 million tons a year or 170,000 tons a month.

Mr. Peterson.—I should say that we should get near it.

Mr. Ginwala.—Within three years from now?

Mr. Peterson.—A great deal of this development is actually in operation. They are sinking new pits that are required to open up particular portions of the collieries.

Mr. Ginwala.—Just about that time when the Greater Extensions are in full operation, the collieries will have been developed.

Mr. Peterson.—If we could find the necessary finance. That is the difficulty.

Mr. Ginwala.—But I understood that you were arranging for it.

Mr. Peterson.—By setting aside a certain amount. In doing that, we have to spread it over seven or eight years.

Mr. Ginwala.—There are no figures to show how your total cost is going to come down in 1924.

Mr. Peterson.—I should say that we ought to get near these costs in about three years, once it is electrically driven.

Mr. Ginwala.—It would make you very big coal producers.

Mr. Mather.—I should like to ask you certain questions about some of the recent statements to clear up one or two points I am not certain of. First of all there is the statement showing the depreciated value of fixed capital expenditure up to 31st March 1922: Is this the fixed capital expenditure on the old plant or on the whole plant in operation on that date?

Mr. Peterson.—Fixed capital expenditure on the old plant.

Mr. Mather.—Does that exclude anything that specifically belongs to the Greater Extensions?

Mr. Peterson.—No.

Mr. Mather.—In your letter No. G/1405/23, dated 26/29th November 1923, you give English prices for various articles. In the list of prices for bars in 1914, there is an extraordinary jump from the 5th March £5-3-3 per ton to the 14th March £8-0-6.

Mr. Peterson.—That is very curious. None of the other prices go up like that

(NOTE.—The prices for 17th and 24th February 1914 and 5th March were for Belgian Bars whereas the price of £8-0-6 was for English Bars. The figures up to 5th March 1914 should be excluded from the statement.)

Mr. Mather.—Probably the earlier figures are too low.

Mr. Peterson.—Possibly.

Mr. Mather.—It is not a matter of vital importance. I simply wanted to know whether it was correct. On the later pages of the same note, you give us the prices of 1922 for various articles and also the prices of 1923 and you average them, but you seem to have no price between 10th October 1922 and 19th March 1923. If prices for November and December had been put in, the averages would probably have been lower.

Mr. Peterson.—Yes.

Mr. Mather.—Similarly in 1923.

Mr. Peterson.—Probably there was very little alteration between October 1922 and 19th March 1923. In order to save money, we asked our London office not to cable these figures if they remained practically the same.

Mr. Mather.—On that basis, rail prices for example would remain at £9-2-6 up to about March 1923.

Mr. Peterson.—Yes.

Mr. Mather.—Obviously it is not quite accurate to take an average from that. However that accounts for the gap. In the works costs of different departments when the Greater Extensions are in full operation, there are one or two things which I think I understand, but which I should like to be quite sure about. In the works cost of the new 28″ mill you have got steam and gas producer at Rs. 2-2·7. That must have been taken from the old mill.

Mr. Peterson.—Yes.

Mr. Mather.—But you use no steam for this mill. Does this Rs. 2-2·7 cover the cost of reheating your blooms for that mill *plus* the cost of the power? That is an electrical driven mill.

Mr. Peterson.—That covers all costs. This is not an actual. This is an estimate.

Mr. Mather.—Rs. 2-2·7 corresponds with Rs. 3-2·7 *plus* Rs. 1-2·7.

Mr. Peterson.—Yes.

Mr. Mather.—Of course it is not actual steam *plus* gas producer. It is electricity.

Mr. Peterson.—There is nothing shown in the statement. For purpose of comparison you must take the two together in the second column and compare them with Rs. 2-2·7.

Mr. Mather.—As far as the first column is concerned, that is really electric power for driving the mill.

Mr. Peterson.—Yes.

Mr. Mather.—A similar point occurs in one of the other statements, that is about the output per man in the different departments. In the footnote to the figures about the coke ovens you say you were not driving your plant so hard.

Mr. Peterson.—What I realy mean is that production has decreased.

सत्यमेव जयते

Mr. Mather.—Were you not driving your coke ovens so hard? The Battelle furnace came into operation in 1919 after the war and you needed additional coke output.

Mr. Peterson.—We must have driven our coke ovens pretty hard.

Mr. Mather.—The falling off in the quality of the raw materials would not affect the output of the coke ovens seriously.

Mr. Peterson.—It is a general remark which is applicable to the plant as a whole and not to the coke ovens in particular.

Mr. Mather.—Similarly the steel specification does not affect your coke ovens?

Mr. Peterson.—No.

Mr. Mather.—We have to use our own judgment how far that applies to each of these departments?

Mr. Peterson.—Yes.

Mr. Mather.—In the statement regarding the coal costs and the Greater Extensions, you give us the estimated monthly outturn of each of the collieries.

Mr. Peterson.—After the development is completed.

Mr. Mather.—The monthly outturn of these four collieries or four groups of collieries comes to 170,000 tons or just over 2 million tons a year. How far is that in excess of your requirements when your Greater Extensions are in full operation?

Mr. Peterson.—A quarter of a million, I suppose. I think that a statement was put in showing our requirements—1,300,000 tons of coking coal, 240,000 tons of gas coal and 300,000 tons of steam coal.

Mr. Mather.—In that case you have not got a very large margin.

Mr. Peterson.—Not very much.

Mr. Mather.—That of course raises another question about your fuel consumption. That is what you expect to consume?

Mr. Peterson.—This is the figure given by Mr. Tutwiler.

Mr. Mather.—I will come back to that point later on. Then about three or four pages further on, you give us the estimated requirements of coal. The table is headed " estimated requirements of coal for each year up to the time by the Tata Iron and Steel Co. when the Greater Extensions are in full operation." The wording of the heading may be wrong, but you give us the figure for 1923-24 as 670,000 tons: that is for the current official year.

Mr. Peterson.—This is a mistake in typing. The figure should be 1,670,000 tons and not 670,000 tons. (It has been corrected by our letter of 22nd December.)

Mr. Mather.—You have not got an estimate ready for the other years.

Mr. Peterson.—We were asked to give an estimate up to the period when the Greater Extensions would be ready.

Mr. Mather.—There are one or two small items in the statement of Greater Extensions capital expenditure. I see that you have an entry there for a bolt and nut shop. Do you intend to make bolts and nuts?

Mr. Peterson.—Not at present. We did originally. We have some machinery. We make some for our own use.

Mr. Mather.—You have another item for the erection of nut and bolt header machine which I believe is erected in your blacksmith's shop.

Mr. Peterson.—We make a certain amount for our own use. It was part of the original estimate and this estimate has been reduced.

Mr. Mather.—This expenditure totals about Rs. 1,29,000. That has probably been diverted to other purposes.

Mr. Peterson.—Probably.

Mr. Mather.—We don't need to take it as part of your programme.

Mr. Peterson.—No.

Mr. Mather.—Later on, in the second page, line 8, from the top, you have furnace F. I take it that that is another thing that has disappeared.

Mr. Peterson.—That may come along later.

Mr. Mather.—3rd line from the bottom you have an item Jamadoba electrical machinery. As far as I can see, it is only colliery machinery.

Mr. Peterson.—That is the plant we are transferring.

Mr. Mather.—Transferring from the works to the colliery.

Mr. Peterson.—Yes.

Mr. Mather.—That will go into the colliery account.

Mr. Peterson.—Yes, it will disappear from here, but it would go into their block.

Mr. Mather.—To that extent this block would be reduced.

Mr. Peterson.—Yes.

Mr. Mather.—It is a very interesting table. We were asking you the other day for an additional column. It would add to its value to the Board if you could have inserted here the final expenditure on these items. In most cases you have by now a close idea what the final expenditure would be.

Mr. Peterson.—You mean whether the estimates will be exceeded or not?

Mr. Mather.—I want that for the purpose of comparing it with the estimates so that the Board might be able to judge what your capital expenditure was on the particular part of the Greater Extensions.

Mr. Peterson.—We can add a column. As a matter of fact we expect on the present estimates a slight saving.

Mr. Mather.—Where it is final, you would say that it is final, and where it is not final, you would give the expenditure required to complete it.

Mr. Peterson.—Yes, we will take that from the estimate.

(Statement submitted with our letter of 28th December.)

Mr. Mather.—If we want to compare your all in costs of plates, for example, if you give us your capital cost, we should know roughly what your overhead expenditure must be.

Mr. Peterson.—Yes.

Mr. Mather.—In your letter No. G/1093, dated the 3rd October 1923, you give us the exports of iron and steel products from certain countries. There is a mistake there. The actual production of Belgium is enormously larger than the figure you quote.

Mr. Peterson.—That would be a mistake.

Mr. Mather.—About this sleeper plant, the position is this. When I was discussing this point with Mr. Tutwiler the other day the impression left in my mind was that the figure shown in your flow sheet of 2,820 tons was the capacity of production of the plant. So far as I know it is at any rate similar to a plant which has been erected in Great Britain since the war, which I was told by one of the Consulting Engineers, India Office, was producing sleepers for India at the rate of four per minute, and it has given an output of 6,000 tons of sleepers in one month. I cannot think it probable that the Steel Company has bought a sleeper plant whose output was so very much below that of a recent sleeper plant installed in Great Britain. I should like you to look into that and let us know the actual capacity.

Mr. Peterson.—We will look into that and give the actual capacity as estimated by the makers and consulting engineers.

(Our letter dated 28th December.)

Mr. Mather.—I would like to go through with you the items in a possible tariff schedule just to see how far the items would come within the scope of the articles for which you want protection. As far as pig iron, cast iron and iron castings are concerned I take it you are not putting forward any claim at all.

Mr. Peterson.—No.

Mr. Mather.—In the case of wrought iron, you have I think asked the Board that if they give the protection you ask for on steel of the kinds you make you have asked the Board to put 20 per cent. on wrought iron.

Mr. Peterson.—We were rather doubtful. The only way in which it affects us is the possible use of wrought iron instead of steel. We were also afraid that wrought iron would be cheaper than steel when an import duty was put on latter. At present there is not much chance as the price of wrought iron is very high, but it might occur that in certain cases it might compete with steel.

Mr. Mather.—It is quite an important point. A very recent issue of the Iron and Coal Trades Review showed that common wrought iron bars from Belgium were quoted at the same price as common steel bars.

Mr. Peterson.—In a case of that kind the duty should be the same.

Mr. Mather.—You think on the whole that for some purposes it can replace steel?

Mr. Peterson.—If a duty is put on one a similar duty might be put on the other.

President.—It depends on how far the price which Mr. Mather has quoted is the average price for wrought iron.

Mr. Mather.—I am quoting that to show the possibility of the difference being small.

Mr. Peterson.—The only reason I suggested 20 per cent. was that the tariff schedule showed the price of wrought iron as double the price of steel.

Mr. Mather.—I do not know that you were comparing similar articles: The price of common wrought iron bars was Rs. 180 and that of common mild steel bars was Rs. 130 according to the Tariff schedule.

Mr. Peterson.—There is a considerable difference in price. That means one would not compete with the other for the same purpose. That was the only reason for the alteration I suggested. If the prices approached each other the duty should be the same.

Mr. Mather.—There are special qualities of wrought iron where the price is two or three times that of steel and there is no case for any extra duty at all. Your only point is to prevent iron being substituted for steel?

Mr. Peterson.—Yes.

Mr Mather.—Crucible steel and so on does not compete in any way with your products?

Mr. Peterson.—No.

Mr. Mather.—Tool steel made by whatever process?

Mr. Peterson.—No.

Mr. Mather.—In the same way alloy steel?

Mr. Peterson.—No.

Mr. Mather.—Steel castings?

Mr. Peterson.—We would not ask for protection on steel castings but the subsidiary industries might. There are people making steel castings in this country: they might ask for protection.

President.—Their representations are before the Board.

Mr. Mather.—Steel scrap?

Mr. Peterson.—No.

Mr. Mather.—What about steel forgings?

Mr. Peterson.—So far as we are concerned we shall not be making much of that.

Mr. Mather.—I do not expect that you will make any important quantity of forgings, but do you know whether any large quantity of steel that you sell is used for the manufacture of forgings?

Mr. Peterson.—We occasionally sell blooms to Calcutta firms to be worked out. I do not know whether anybody except Burn's buy our steel for that purpose. In any case it is a small quantity in the year.

Mr. Mather.—Probably it is small at present but you see the Peninsular Locomotive Company may at the earlier stages have to be importing blooms and forging themselves. They do not want a duty on that. You do not think that it would harm your interests to any extent.

President.—It cannot be in your interest to sell many blooms, as you have to keep your rolling mills going?

Mr. Peterson.—We only sell occasionally and in small quantities. Now and then we are asked for special blooms. We make them but we do not sell as a rule.

Mr. Mather.—So far as rough forgings or finished forgings are concerned, you do not want any protection?

Mr. Peterson.—No.

Mr. Mather.—What about blooms for forgings? There is an item at present for ingots, blooms, billets and slabs in the schedule. Do you think it would in any way reduce the effectiveness of protection if these items were left together in one class?

Mr. Peterson.—It is difficult to distinguish between ingots and slabs. There should be no chance of bringing in, say, circular plates as slabs. These are used for making sugar bowls and rice bowls. There is no technical definition for the word "slab" at all. The dictionary definition will mean any piece of steel—anything and everything. If it means ingots, blooms and slabs, in the ordinary course there is no objection. But the danger is that other things might be brought in under this description.

Mr. Mather.—If anybody—say an engineering firm or the Locomotive company—wanted to import anything that would come under this heading, that would not trouble you, but you want to be safeguarded against any misapplication of these headings. Slabs might possibly be dealt with by putting in a limit to thickness.

Mr. Peterson.—There is also this difficulty that works might be established here to manufacture articles for which they would require the raw steel from us or import it.

Mr. Mather.—Nobody is doing it at present and people would not be able to do it without your hearing of it.

Mr. Peterson.—Certainly not.

Mr. Mather.—So that, subject to certain safeguards, that particular item might be left as it stands as far as the interests of the Steel Company are concerned.

Mr. Peterson.—Yes.

Mr. Mather.—Bars and rods. Do you intend to supply any bright drawn or bright rolled rods or any rods with coated tin, lead and zinc and so on?

Mr. Peterson.—No. But we might later supply galvanised rods, *i.e.*, zinc coated, if we find there is any demand.

Mr. Mather.—Structural sections: you do not intend to roll any bulb plates or bulb angles?

Mr. Peterson.—Not at present.

Mr. Mather.—Do you think that if they were left out of any protective part of tariff it would interfere with your market?

Mr. Peterson.—I do not know what they are used for.

Mr. Mather.—I think chiefly in ship building and also in construction of rolling-stock.

Mr. Peterson.—We will roll bulb angles but not bulb plates. They are required for railway waggons.

Mr. Mather.—You intend to roll ordinary sections, angles, beams, channels tees and so on in all the British Standard dimensions.

Mr. Peterson.—Yes.

Mr. Mather.—Z sections do you propose to roll?

Mr. Peterson.—We propose to roll them if there is any demand for them.

सत्यमेव जयते

Mr. Mather.—Also there is another type of structural section of which the Port Commissioners in Calcutta told us. They use a certain number of steel piling sections.

Mr. Peterson.—We do intend to roll piling sections. We have a contract with an English Company to roll them.

Mr. Mather.—Steel bolts and nuts. You have already told us that you do not propose to make any. Do you know if any people to whom you sell your steel bars are making bolts and nuts from them?

Mr. Peterson.—I think most of the bolt and nut factories are shut down now. They were making during the war.

Mr. Mather.—Of course many of them were making temporarily at that time.

Mr. Peterson.—There were two factories started in Calcutta. I do not think they are buying steel from us: they may be buying from our dealers.

Mr. Mather.—You do not happen to know that.

Mr. Peterson.—I do not know.

Mr. Mather.—Hoops, strips and bright rolled strips. Do you want to roll any strips coated with zinc and tin?

Mr. Peterson.—No. All that we would make is ordinary baling hoop.

Mr. Mather.—Can you give us any idea as to when you expect to roll these?

Mr. Peterson.—We have that in mind. As soon as the plant is working we propose to roll that. It is not worth while to put up a regular strip mill now.

Mr. Mather.—Is there any chance?

Mr. Peterson.—At any rate it does not enter into our programme for next year.

Mr. Mather.—I suppose the position about rivets and washers is similar to that of bolts and nuts.

Mr. Peterson.—Much the same. There were several works fairly well equipped and started in Calcutta, but I think most of them have been unsuccessful.

Mr. Mather.—You are not depending on makers of these for any part of your market?

Mr. Peterson.—No.

Mr. Mather.—Pipes and tubes are not made in India?

Mr. Peterson.—No.

Mr. Mather.—That would apply to ordinary pipes. What about built-up pipe?

Mr. Peterson.—You mean made from plates?

Mr. Mather.—Yes.

Mr. Peterson.—It is possible that we might take work of that kind. We contemplated rolling plates for a big pipe line in Bombay, but at that time our plate mill was not working and we could not give any definite tender as we were uncertain as to what the cost would be. Work of that kind we could take, especially when the machine shops are more or less free. We actually made a sort of tender for the Bombay Corporation, but the question of freight and many other things entered into the tender and we did not wish to push it through.

Mr. Mather.—However you do regard that kind of work as a possibility?

Mr. Peterson.—We spent a long time over that contract. On this side of India I think there would be very strong chances of our endeavouring to obtain a contract of that kind.

Mr. Mather.—Since the date of that tender you are operating your plate mill and you have a better idea as to what it costs and so on.

Mr. Peterson.—If it had been Calcutta we would probably have taken that contract. It was a question of freight from Jamshedpur to Bombay. We would really be competing against the steamer freight from England.

Mr. Mather.—In any big work of that kind you would be a competitor?

Mr. Peterson.—We would.

President.—Are welded pipes suitable for the same thing as built-up pipes? Do you ever make welded ones of the large type?

Mr. Peterson.—They are very special. They would certainly not be used unless a great pressure of water was expected. They are used in hydro-electric schemes but not in ordinary water supply.

Mr. Mather.—Fish plates and rails are obvious. What about steel bearing plates?

Mr. Peterson.—We would be making these.

Mr. Mather.—What about spikes?

Mr. Peterson.—We are not actually making these at present but we expect them to be made out of our steel.

Mr. Mather.—Are they making them?

Mr. Peterson.—They are making them out of our steel in Calcutta. The Railways are also making them out of our steel.

Mr. Mather.—Burn's make them I think. You would regard yourself as possible competitors for steel required for that work.

Mr. Peterson.—Yes.

Mr. Mather.—Can you tell us about the possibility or prospects of your making boiler plate?

Mr. Peterson.—We should not make them for some time. They might be made eventually but there is no immediate prospect of it. For one thing the demand does not make it worth while. You will always however have to consider the possibility that these special plates might be lower in price than ordinary mild plates with duty and it might be worth while for people to buy them.

Mr. Mather.—In the present entry "Plates, boiler fire-box and special qualities above ⅛ inch in thickness" you do not intend to make any?

Mr. Peterson.—No. If you are dealing with a special quality anything might come in as a special quality. Somebody might put in an analysis and claim that it should come in free of duty.

Mr. Mather.—A safeguard of some description should be considered?

Mr. Peterson.—That is all.

Mr. Mather.—But the plates you intend to make are ordinary type of plates. I understand that you do not intend to make plates above 1¼ inch.

Mr. Peterson.—⅛ to 1¼ inch thickness.

Mr. Mather.—So that if anybody for special purposes required thicker plates they would not be competing with you.

Mr. Peterson.—No.

Mr. Mather.—Sheets. You do not intend to make any bright rolled sheets?

Mr. Peterson.—No. Corrugated, galvanised or black sheets only.

Mr. Mather.—What is your position about springs?

Mr. Peterson.—We should not be making these either.

Mr. Mather.—Tram rails?

Mr. Peterson.—We are not making but we might make them eventually.

Mr. Mather.—What about axles, tyres and wheels?

Mr. Peterson.—We will make none of that at present.

Mr. Mather.—As far as you can judge, have I covered all the kinds of products that the Steel Company are interested in?

Mr. Peterson.—Yes, I think so.

Mr. Mather.—Sheet bars—do they come under bars?

Mr. Peterson.—I think they come either under billets or slabs if they come in at all.

Mr. Mather.—Subject to any further correction we have probably examined most of the questions that might likely arise about the classification in the schedule. I would like to know whether you intend to make ribbed re-inforcing bars?

Mr. Peterson.—At one time we did propose to make the special type of bars for re-inforcement and we contemplated a contract with the Truscon Steel Company in America, and we have just re-opened negotiations, but we have not yet heard as to what has happened. We wrote to them 6 weeks ago. That contract contemplated a total tonnage of 29 to 30 thousand tons a year of specially shaped bars for re-inforcement so that there is a probability that we will roll them.

Mr. Mather.—Otherwise you would just be rolling ordinary plain bars?

Mr. Peterson.—Yes. I may add that re-inforced concrete engineers vary greatly in opinion as to the shapes and some state that there is no advantage in any special shape at all.

Mr. Mather.—Our own point is whether it is clear that you are not likely to be making any particular article, and whether that article would not be likely to compete with those that you may be making. It is obviously no body's interest that it should be included in the protection.

Mr. Peterson.—The question at once arises that if you exempt any special shape of bars, naturally the re-inforced concrete engineers would use these when they found that they could get these much cheaper than the ordinary ones, although it may be no great advantage to them.

Mr. Mather.—That statement of the products that you intend to roll is, as far as I can judge, complete for billets, channels, angles, tees. You show in your list a complete range of standard sections: to be able to roll these would involve an enormous stock of rolls.

Mr. Peterson.—That is the reason for the large stock we hold. We have got to have all shapes.

Mr. Mather.—Do you intend actually to roll all sections?

Mr. Peterson.—One of the difficulties of the old mill is that we cannot roll economical sections. That is one reason why our steel is not acceptable in many cases. They have to take a size larger which is too heavy and increases the cost of the building. So we expect to roll all these sections and hold stocks of all the rolls required for rolling them.

Mr. Mather.—Do you intend to hold these in stock?

Mr. Peterson.—We do. As soon as we get near our full production in order to get a market we have to roll every size and shape of all sections.

Mr. Mather.—That is very possible. Of course your old mill or the new 28″ mill are those in which you roll rails. You have not shown how you propose to divide rails and structural sections between the mills

Mr. Peterson.—The idea is to roll all the rails in the new and the structurals in the old mill.

Mr. Mather.—That would be about 60,000 tons structural steel in the old mill; and the 175,000 tons that you have shown in your flow sheet against the new 28″ mill will be, as far as you can judge, almost entirely all rails?

Mr. Peterson.—Yes. The larger sections will be rolled in the new mill; 24×7½ and 20×7½ will be rolled in the new mill.

Mr. Mather.—Can you tell me how far your workmen here stay after they have been trained?

Mr. Peterson.—A good many of them stay for a long time. Some of them have been here since the start of the Company and a large number of them may be considered as pretty settled. They are practically settled in Jamshedpur.

Mr. Mather.—So that you think you have probably got over a good deal of the difficulty of training raw recruits. Men have shown themselves willing to stay here?

Mr. Peterson.—Yes.

Mr. Mather.—In your flow sheet you have shown us an allotment of 12,000 tons of pig iron to go for the castings in your own foundry. Do you happen to know just how that was arrived at?

Mr. Peterson.—I don't know exactly how that figure was arrived at. The rolls and moulds would take a good deal of it. Then of course we originally intended to put in a pipe foundry but we did not get further with the idea at the time, but we intend to take orders if they can be obtained. It is intended that the foundry should do outside work if this could be obtained.

President.—Would it not depend upon your surplus pig iron? It would not probably pay you to do it until you reach the limit of your production of pig iron?

Mr. Peterson.—We would have a surplus. We might not sell it: we would consider whether it is better to sell it as pig iron or as castings.

Mr. Mather.—Your point is this that if this 12,000 tons of pig iron is used in making moulds and so on, then it obviously means fairly small expenditure on foundry work for more or less ordinary maintenance. Obviously there will be more or less in proportion to the amount of pig iron.

Mr. Peterson.—We are using 10,000 tons in the foundry this year and last year (1921-22) it was 9,900.

Mr. Mather.—In 1924 you expect to use 9,600 tons.

Mr. Peterson.—Yes.

Mr. Mather.—There is another point that came up in the earlier statement given to the Board. You gave us a list of the extras that you charge on your steel and for channels, bars and so on, and also you gave us for comparison a list of English extras. I do not find that there is even any moderately close relation between these extras.

Mr. Peterson.—I don't think there is. We have been using the American system.

Mr. Mather.—Do you expect people to pay that?

Mr. Peterson.—I think the English extras are higher as a matter of fact.

Mr. Mather.—In some cases the English extras are about Rs. 40 per ton higher than yours. In that case does it not look as if you put these extras on the same basic price; you are charging a substantially lower rate than the ordinary market rate for these special sizes?

Mr. Peterson.—We increased the extras for fishplates for that reason.

Mr. Mather.—They are fixed under the contract at Rs. 30 a ton.

Mr. Peterson.—I am referring to the revision of the price by Government. We pointed out that the difference in the extras for fishplates was much higher than it was at the time.

Mr. Mather.—Your extras are Rs. 30 and you say the English extras are higher. There are one or two items of that type. Then again in the other direction, on squares and rounds ½ inch to 9/16 inch your extra is Rs. 50 a ton and the English extra Rs. 9-6 a ton.

Mr. Peterson.—I know that in several cases the extras have not been drawn up in accordance with the English system.

President.—The English price governs your price?

Mr. Peterson.—The English base price.

President.—Surely it does for extras also, at any rate if any sizes were required in large quantities?

Mr. Mather.—If you assume that the prices were precisely in accordance with these two lists, it would seem that you were charging more than the English extras, but in the other case you would appear to be charging something less.

Mr. Peterson.—I have never seen any objection raised to our extras.

Mr. Mather. If it happens to work against you there would naturally be no objection.

Mr. Peterson.—We put the price of extras on the basis of what it costs us to roll. Our mills are so very different from the mills in England that sections which might be very easy for them to roll might cost us a great deal.

Mr. Mather.—May we take the position as this that the list of extras that you have given us is the list that you are actually working on?

Mr. Peterson.—Yes.

Mr. Mather.—And as far as the English extras are concerned, can you tell us just how you got that?

Mr. Peterson.—From the trade papers I think.

Mr. Mather.—What I wanted to know was whether it is more or less the current list in the English trade at present.

Mr. Peterson.—It was current about August, I think.

Mr. Mather.—When Mr. Tutwiler was here for examination the other day I was asking him about the general distribution of the fuel in the works, coal and coke oven gas, blast furnace gas and tar and producer gas, and he said he would get out a statement showing the heat economy. That I presume is being prepared both as to the present conditions and for the future?

Mr. Peterson.—Yes.

Mr. Mather.—That flow sheet may cover the point, but I would like to know a little more about this estimate of coal consumption in the future which you just pointed out. The earlier records show that when the Greater Extensions are working your estimate is 1,840 million tons of coal to make 421,000 tons of finished steel and 40,000 tons of surplus pig iron. If we take that pig iron needs half the amount of fuel that steel does that is equivalent to 441,000 tons of finished steel?

Mr. Peterson.—Yes.

Mr. Mather.—On that coal consumption that will mean that you will have a slightly higher coal consumption per ton than you have at present.

Mr. Peterson.—Are you taking into account the increase in the consumption of coal for the supply of power, water, light and subsidiaries?

Mr. Mather.—I am taking that into account.

Mr. Peterson.—I don't think that the estimate of the total amount of coal required for the Greater Extensions is anything like accurate; it is only a theoretical estimate.

Mr. Mather.—I don't want a theoretical estimate.

Mr. Peterson.—If you ask us how much coal we will require, we will naturally put the figure high because if we put the figure low and do not get our full supplies we shall be very badly hit. It is a matter of transport.

Mr. Mather.—I am not thinking from the point of view of the necessary provision for coal.

Mr. Peterson.—That is what we are always thinking of. We cannot put it low.

Mr. Mather.—How much coal do you expect to use for a ton of finished steel when your Greater Extensions are in operation?

Mr. Peterson.—I think it would be somewhere between 3 to 4 tons.

Mr. Mather.—You don't think you would be able to get it down to less than that?

Mr. Peterson.—We might in the new plant.

Mr. Mather.—The position now is quite different from what it was when the Company first drew up its scheme. Coal was cheap then?

Mr. Peterson.—Ultimately we will get it down much more. One of the first things to be investigated is this question of the use of fuel in the works because the cost of fuel has gone up so very greatly In the same way we must investigate the question of mechanical loading and that kind of thing because the cost of labour is going up.

Mr. Mather.—I want to see how far that has been investigated in the scheme for your Greater Extensions. I am trying to find out what the effect of that will be on your coal consumption. After all, by now at any rate, you have got enough experience of your new type of blast furnaces, coke ovens and so on.

Mr. Peterson.—These we can work out theoretically as I say. These figures regarding the consumption of coal were asked for in connection with the question what raw materials we have and how long they will last and also what facilities we have of transporting them to the works. We were not asked from the other point of view. If you want an exact estimate made of the consumption of coal we can have that done.

Mr. Mather.—I was not here when these figures were asked for. I want it to be based on the actual experience of which you have got a good deal now for your new plant.

Mr. Peterson.—I do not see how we can base it on actual experience of the whole plant. It is not yet in operation.

Mr. Mather.—The fuel consumption in the old departments of the works is not satisfactory and is not in line with modern practice in view of anything like the current price of coal. The design of the plant in many cases makes it necessary, but I think it is important for the Board to know how far that has been taken into account in designing the new plant.

Mr. Peterson.—The best evidence of that is the Consulting Engineer's estimate of the actual use of heat in the new plant. We know how much coal will be used, we know what the production will be and we can work that out for the new plant.

Mr. Mather.—Would you mind doing that?

Mr. Peterson.—It may be taken at 4 tons per ton of finished steel. We have submitted a fresh flow sheet.

Mr. Mather.—As coal prices are at present, it is an extremely important item of your future economy.

Mr. Peterson.—Yes.

President.—You have told us to-day that you have postponed blowing in the new blast furnaces until the railways are in a position to transport the raw materials.

Mr. Peterson.—What actually happened was that we would not blow the blast furnace in until we received the raw materials we wanted, first because we had not enough stocks and secondly we must be sure that the supply would continue.

President.—Are you satisfied that the railways can now transport the quantities of material you require.

Mr. Peterson.—Yes.

President.—How long is it since the railways have been able to transport?

Mr. Peterson.—Since the beginning of November.

President.—Then for practical purposes the Greater Extensions could not get into full operation at an earlier date?

Mr. Peterson.—No.

President.—That is of some importance because you might have been able to start the Greater Extensions earlier but that was the reason why you could not get into full operation. It rather suggests that the sanguine estimate as to the time you would be able to start was overlooked a bit.

Mr. Peterson.—But that was a condition that was not expected. I do not know what the cause of that was, but we think one of the causes probably was that sufficient money was not spent on the railways after the war. They were stinted for funds and their complaint was that they had no funds to make the necessary alterations.

President.—Were the necessary changes in the railway system thought out when the Greater Extensions were planned?

Mr. Peterson.—Yes. They were put before the Railway Board and the Bengal Nagpur Railway in about 1918, and we practically had an assurance that the railways would carry all the raw materials when required. I think the assurance came from the Railway Board. I am not certain whether any assurance came from the Railway.

President.—You have told us that your works cost at present on the Plate Mill is Rs. 143 a ton and you have told us what you expect it will be when the new Bar and Billet Mills come into operation. Can you tell us what you have actually received as the price of your sheet bars?

Mr. Peterson.—Up to the present we cannot because we have not completed a year yet. The final price would depend on the price at which other tinplates can be sold in Calcutta and that has not yet been fixed. It cannot be fixed until a year expires. I think the former supplies were under a provisional arrangement. They do not come under the contract. We do not know what the prices will be until a year expires.

President.—I worked out the price on the basis of the figures supplied by the Tinplate Company. They gave us two prices—one for the 7th of April which is the higher one and one for the 4th of August. The price (f.o.b.) on the 7th of April was 25*s.* 7*d.* and on 4th August 23*s.* 1*d.* recently raised to 23*s.* 6*d.*

Mr. Peterson.—That is for tinplates. They have not given the landed price in Calcutta.

President.—They gave us data about black sheets.

Mr. Peterson.—As a matter of fact the Tinplate Company and ourselves are not in agreement on the question of price, because they claim that they are entitled to the provisional price of any bar which can be purchased from any source, and our information is that none of the English tinplate manufacturers really use such bars. So far as we know there is only one manufacturer who has used them. Our contract says that prices must be based on sheet bar of the same quality as the particular bar which we sent to England, so that there is at present a dispute on the question of price. They asked us to reduce the price for the first quarter of the year. We refused. That is possibly the reason why they have given you two prices.

President.—It was merely to show how the thing would work out at two different prices.

Mr. Peterson.—Are you trying to ascertain what the loss to the Steel Company will be? This year there will be a loss. We have estimated—I have forgotten what we estimated it at—it is somewhere between six and nine lakhs. The Tinplate Company is not running fully and we expect a loss, in any case, during the first two or three years. We will spread that over several years.

President.—I think that I have worked out on the basis of these two prices. According to the price of 7th April, it is Rs. 132-8-0 and according to the price of 4th August it is Rs. 110-8-0 which is considerably below your works cost.

Mr. Peterson.—As I said, there will be a loss.

President.—When you add the overhead, the loss would be pretty considerable.

Mr. Peterson.—That is what we estimated approximately. We want to spread that over five or seven years.

President.—This estimate was based on the full production of the six mills of the Tinplate Company

Mr. Peterson.—At what price have you estimated for the tinplate sold f.o.r. Howrah?

President.—The tinplate prices were those of the same dates. I worked it out both ways.

Mr. Peterson.—From our point of view it works this way. We should not expect this company to make a profit in the first year or two. When they begin to make a profit, we share in that. We cannot make an accurate estimate until we get the results of the year.

President.—Prices for the first quarter are not finally fixed.

Mr. Peterson.—It would depend on the profits, if there are any.

President.—According to the figures, there will be no profit on the full production. That is their estimate. It does not prove anything. However I wanted to get the figures if you were able to get them, but if you have not got them, it is not possible.

Mr. Ginwala.—About the orders sent to the United States for the Greater Extensions: are these prices f.o.b. or c.i.f. prices?

Mr. Peterson.—F.o.b. prices for orders actually placed in America. Freight and everything else would be additional and would depend on the time when the materials came out.

Mr. Ginwala.—They amount to about Rs. 7 crores.

Mr. Peterson.—About that.

Mr. Ginwala.—Whereas your Greater Extensions would come to Rs. 13 crores. A great deal of that expenditure would be on freight, foundation, site, etc.

Mr. Peterson.—Yes.

Mr. Ginwala.—Supposing you are to ascertain the basic price of steel for comparison with the United States, how will you base your average? Will you consider it reasonable to take billets, bars and rails and strike the average?

Mr. Peterson.—You could adopt that.

Mr. Ginwala.—Billets are semi-finished whereas bars and rails are more or less finished articles.

Mr. Peterson.—Structural steel I should think would be a better basis.

Mr. Ginwala.—I have not got any figures for structural steel in America.

Mr. Peterson.—I don't think that there would be very much variation, whichever you take.

Mr. Ginwala.—Now with regard to the 1920 order, you seem to have paid a price of nearly 7 cents per lb. Is that fabricated structural steel?

Mr. Peterson.—That is for buildings. It includes freight and erection charges in India.

Mr. Ginwala.—That is about 100 per cent. difference.

Mr. Peterson.—I cannot say, I have not got the price for similar steel.

Mr. Ginwala.—I wanted to know whether that was really fabricated. You simply say structural steel:

Mr. Peterson.—That is fabricated.

Mr. Mather.—Is this total of $3¾ millions the final price for the whole production?

Mr. Peterson.—For the whole quantity.

Mr. Mather.—Does that include erection charges?

Mr. Peterson.—Yes.

Mr. Ginwala.—You can give me any figures which I can compare.

Mr. Peterson.—This will be structural steel of a definite type. It will be sold per pound in America. We can find what the actual price paid was excluding the cost of erection. We can give you a similar price for the present date, so that you can make an exact comparison.

Mr. Mather.—Will you be able to give the current price?

Mr. Peterson.—Surely. We will extract the cost of the fabricated steel f.o.r. their works.

Mr. Ginwala.—That is the heaviest order in 1920.

Mr. Peterson.—Yes, that is why I mentioned it specifically.

Mr. Ginwala.—You had some structural work done here also locally.

Mr. Peterson.—Yes.

Mr. Ginwala.—Was that price settled earlier?

Mr. Peterson.—Earlier, I think.

Mr. Ginwala.—Did they finish their work?

Mr. Peterson.—Yes.

Mr. Ginwala.—How much did that come to?

Mr. Peterson.—The contract was not very big, about 12,000 tons. We increased their rates because they said that the increase in the cost of labour had made it impossible for them to work at rates originally fixed.

Mr. Kale.—Why was the order in 1920 so heavy? Was that because you could not get materials in the earlier years?

Mr. Peterson.—Partly.

President.—At the time you placed the order, there was no alternative but to place it in America.

Mr. Peterson.—We could not have got the materials from anywhere else.

President.—Having once started, you went on buying in America

Mr. Peterson.—Yes.

President.—If you are to order for anything now, I take it that you will consider very carefully which is the cheapest market.

Mr. Peterson.—As a matter of fact in 1920 we did call for competitive quotations and we did not find it cheaper.

President.—I don't suggest that in 1920 you could have purchased it cheaper in Great Britain, but if you were to order now, you would consider which is the cheapest market.

Mr. Peterson.—We should probably call for quotations from many different countries.

President.—The point that I am really suggesting is that it is possible that American present day prices are rather above what you could purchase from anywhere else.

Mr. Peterson.—Probably.

President.—That brings you to the question what it would cost you to put up a similar plant.

Mr. Ginwala.—Was not your idea in choosing the American plant that it was more suitable because it had more labour-saving appliances?

Mr. Peterson.—The nearest approach to the climatic and other conditions of India is to be found in the Southern States, Alabama. We made use of their experience.

Mr. Ginwala.—Other things being equal, you would prefer the States

Mr. Peterson.—Their designs. Yes. They are more up to date.

President.—Would it be impossible to get the things done to a similar design in other countries?

Mr. Peterson.—I do not know. There might be certain difficulties. A good deal of this plant would be quite unknown in England. Blast furnaces of this size at the time when we put them up were quite unusual in England.

Mr. Ginwala.—Is not the continuous mill an American patent?

Mr. Peterson.—Yes.

Mr. Ginwala.—Even if you wanted to get from other countries a similar plant, would it be possible to have got one from any other country?

Mr. Peterson.—Yes. The position was really this. We could not obtain this plant from any other part of the world. We engaged American Consulting Engineers and naturally they placed orders in America. In the middle of the erection, we could hardly stop so to speak and take stock again and consider where we could buy more cheaply.

President.—I am not suggesting that at all. We do know now that prices of steel are rather lower in other countries than in America and we wanted to ask you what you would do now.

Mr. Ginwala.—You consider that Rs. 445 lakhs of working capital is the irreducible minimum.

Mr. Peterson.—Yes, but the collieries have not been included.

Mr. Ginwala.—That is excluding collieries.

Mr Peterson.—Yes.

President.—I am disposed to take the previous figures for collieries as well.

Mr. Peterson.—We have given Rs. 35 lakhs for collieries.

Mr. Ginwala.—I wanted first to ascertain the working capital they required and secondly the reason why a manufacturer of steel in India would require to have more working capital than a manufacturer in the States or United Kingdom.

Mr. Peterson.—The points that struck the Board most were these: —

(1) Spare rolls. You wanted to know what the consumption was. The consumption last year was 4 lakhs. We will have to make new shapes and sections. We must hold these rolls in order to make them.

(2) Spare ingot moulds. The explanation is that we expect to make and scrap every year about 10 lakhs worth of moulds.

(3) Stores. You wanted to know how many months' consumption it represented. It represents six months' consumption.

(4) Operation spares and loose tools. It includes a considerable amount of spares. We hold these spares as we cannot make them here.

President.—You might start with a considerable stock, and it might be a larger stock than you might normally require.

Mr. Peterson.—These spares are essential.

(5) Bricks. These consist of a variety of shapes. Some of the rare shapes are for a year or more in stock but regular bricks in stock will be about three months' consumption.

(6) Coal—less than two months' consumption.

(7) Iron & Manganese ore—three months' consumption.

(8) Limestone—three months' consumption.

(9) Sulphur—six months; and scrap, etc.—3 months.

(10) Outstandings (Jamshedpur)—45 days' sales.

President.—What it comes to is this: these figures represent so many months' consumption. After that period, these things are getting into your works cost.

Mr. Peterson.—Yes. We must hold this quantity in stock on any given date. We must have the money.

President.—Still, I don't see how the final cost works out like this. I cannot understand how the total comes out so high.

Mr. Mather.—Rs. 70 lakhs of electrical stores represent only 6 months' consumption? Is your consumption of these stores nearly 1½ crores? It cannot be such a big proportion.

Mr. Ginwala.—The actual consumption in 1921-22 is Rs. 1·84 lakhs only.

Mr. Peterson.—That is locally purchased. It is not imported stores.

President.—You spend Rs. 120 lakhs in bricks, Rs. 150 lakhs in coal and Rs. 140 lakhs in stores. You are working up your total expenditure excluding labour.

Mr. Peterson.—What are you taking as total works expenses?

President.—Take coal: Rs. 20 lakhs is two months' consumption. Six times 20 lakhs is Rs. 120 lakhs. You say that Rs. 30 lakhs is only three months' consumption of bricks.

Mr. Peterson.—Not in some cases.

President.—On an average we can take it as four months' consumption. I have worked that out. It is about Rs. 5 crores on the basis of Rs. 125 as being the average works cost of your steel products. I don't worry about pig iron because it is not a very large quantity (400,000×Rs. 125=Rs. 5 crores). I have already got up to Rs. 420 lakhs excluding wages and labour per year.

Mr. Peterson.—It would be about Rs. 4½ crores on these heads. You have got practically everything here except labour and labour is not such a very heavy item. Labour is at present Rs. 70 lakhs excluding town, etc. I don't expect that it will be more than Rs. 110 lakhs when the extensions are complete.

President.—Labour would rise too.

Mr. Peterson.—We don't expect a rise of more than 50 per cent. in that.

President.—Does that include wages paid to the people in the Greater Extensions?

Mr. Peterson.—Yes. With the Greater Extensions we expect that the labour charge would go up from Rs. 70 lakhs to Rs. 110 lakhs a year.

President.—This includes labour employed in construction works.

Mr. Peterson.—Rs. 70 lakhs for operations only. The works costs will be about 4½ crores.

Mr. Ginwala.—Your works cost is about Rs. 5 crores.

Mr. Peterson.—I am simply taking 440,000 tons of finished steel at Rs. 100 a ton. Let us work the statement by the new method suggested by the President and let us see what it comes to. That comes to Rs. 480 lakhs.

President.—I think your estimate is still on the high side somewhere.

Mr. Peterson.—I am not prepared to reduce it. We have only given the estimates prepared by the heads of Departments.

President.—It does seem to me looking at it in this way to work out to a high figure. I do not think we can really say any more about it.

Mr. Ginwala.—In this Rs. 445 lakhs that you have given spare rolls are imported?

Mr. Peterson.—Some of them are imported and some of them made.

Mr. Ginwala.—Spare ingot moulds—you make yourselves?

Mr. Peterson.—Yes.

Mr. Ginwala.—Stores?

Mr. Peterson.—Almost entirely imported. We have given to Prof. Kale a statement showing the stores locally obtained—purchased from people who have imported these. Practically all these stores are imported.

Mr. Ginwala.—How much stores, rolls and things like that you have to import?

Mr. Peterson.—Except timber, bricks and things of that kind, some amount of stationery and things of that sort, practically the whole of that is imported.

Mr. Ginwala.—That is to say you have got to pay on your imported stores and articles 30 to 40 per cent. more than what they would cost at Home. I want to ascertain roughly what that comes to. That makes your cost of production here greater than either in America or on the Continent.

Mr. Peterson.—We have given a statement.

Mr. Ginwala.—That shows that in one particular year you paid Rs. 2 lakhs duty. That is not the thing required. The point is this. The steel industry is credited with many natural advantages.

Mr. Peterson.—Statement No. XVII gives roughly the duties paid on the various kinds of goods.

Mr. Ginwala.—We are more concerned with the money value of the goods.

Mr. Peterson.—We can supply a statement showing exactly what we import.

Mr. Ginwala.—There are certain advantages which people say this industry has got in this country but it has many disadvantage such as this. If you use Rs. 140 lakhs worth of stores a year and pay 30 to 40 per cent. more than what the British manufacturer pays you at once increase the cost of your production by this.

Mr. Peterson.—We made that point in the original application to Government. We can give you an exact statement showing what stores have been imported and what duty has been paid either in detail or simply in total.

Mr. Ginwala.—That will do for my purpose. Then you say stores—Rs. 70 lakhs.

Mr. Peterson.—This is only an estimate. We can give you our expenses on stores last year and we can give an estimate of the stores required after the Greater Extensions are complete.

Mr. Ginwala.—Everything more or less you have got to import?

Mr. Peterson.—Out of this Rs. 70 lakhs I should say Rs. 60 to Rs. 65 lakhs would be imported material.

In the operation spares and loose tools in the same proportion, about Rs. 45 lakhs.

In rolls about half or Rs. 25 lakhs worth of rolls have to be imported.

Mr. Ginwala.—You said that their cost is increased by 30 to 40 per cent. Will you show the British price, duty, landing and insurance charges and so on?

Mr. Peterson.—We can give you that.

Mr. Ginwala.—Why should the additional cost be as much as that?

Mr. Peterson.—The additional cost would depend on the value of the article. For instance for certain materials the freight would be nothing while on rolls the freight would be very high.

Mr. Mather.—On the other hand, the freight on a ton of rolls would be smaller in proportion to the value of the rolls than on steel sections.

Mr. Ginwala.—In the case of electrical stores does a man get them here for 5 per cent. to 10 per cent. more than for what you can get them at Home?

Mr. Peterson.—Generally not.

President.—About these electrical stores. I have been rather carefully through your cost accounts. I cannot trace any item which costs anything like Rs. 140 lakhs a year, which is ¼ of your total working expenditure.

Mr. Peterson.—It includes hardware, oils and all sundries.

Mr. Ginwala.—Would you give the actual figures?

Mr. Peterson.—Yes—the headings showing the various classes of stores that come into this Rs. 70 lakhs.

Mr. Mather.—Is it a possible explanation that these articles have been valued twice?

Mr. Peterson.—That is not the explanation.

Mr. Mather.—Are they valued at present prices or at the prices at which they were actually bought, perhaps a year or two ago when prices were high?

Mr. Peterson.—The figure Rs. 35 lakhs is for the present production.

President.—The point is, what do you use annually?—that is the important figure.

Mr. Peterson.—I would like to put it that if the Board are satisfied that Rs. 35 lakhs is a reasonable figure for the present plant they should accept Rs. 70 lakhs for the Greater Extensions. We will give you actual figures of stores for these Rs. 35 lakhs consumed in the last year.

Mr. Ginwala.—Will you separate them for the Greater Extensions?

Mr. Peterson.—Yes.

Mr. Ginwala.—Then will you give figures for (3) and (4)? You have already said that you would give for rolls. You can leave ingots.

Mr. Peterson.—Yes. (We attach a note regarding stocks of Rolls, Ingot moulds, coal, lime, sulphur, scrap and electrical stocks.)

President.—Take your statement for 1921-22—page 1 of the printed statements and notes received from Tata's—you show a charge of Rs. 1-4-0 per ton for ingot moulds and stools. Production of ingots comes to Rs. 2 lakhs.

Mr. Peterson.—Two lakhs is the figure which we have actually shown in to-day's working capital.

Mr. Mather.—You are going to get 5 times the ingots?

Mr. Peterson.—Yes.

Mr. Mather.—That does not agree with the production figures you have given us.

President.—Why should you stock a whole year's supply I cannot understand.

Mr. Ginwala.—Can you give us actual consumption of spare rolls, ingot moulds, stores, operation spares, etc., and sulphur?

Mr. Peterson.—Yes.

Mr. Ginwala.—You have given us a statement showing the quantity of bricks that you actually used in 1921-22. That comes to Rs. 13·8 lakhs. These are mostly special kinds of bricks that you use.

Mr. Peterson.—Yes.

Mr. Ginwala.—This brick making industry was started recently. How do the prices compare?

Mr. Peterson.—We have given you a statement of prices.

Mr. Ginwala.—Does the higher management come in for the bonus?

Mr. Peterson.—The General Manager's contract requires a bonus and the General Superintendent has been given a bonus on the results of the year's work, at the discretion of the Board. His contract does not call for a bonus.

Mr. Mather.—Superintendents of the other Departments are shown as receiving bonus?

Mr. Peterson.—Yes. They do get bonus. The reason why no bonus was paid to the blast furnace Superintendent was that he was brought from America on a straight salary, not on a bonus system.

सत्यमेव जयते

CALCUTTA : PRINTED BY SUPDT. GOVT. PRINTING, INDIA, 8, HASTINGS STREET.

सत्यमेव जयते